

NEW NC MILLING MACHINE recently went into operation in Computer Aided Manufacturing Section 4251-2 under Frank Long. The XLO 210 "work center" is a tape-driven machine that can produce complex parts to exacting dimensional accuracy. It is the eighth numerically controlled machine in the Development Shops. Programming is performed by Section 4251-2. Operator is Jim Jordan.

What Every Sandian Should Have And Can Hardly Do Without

Margaret Platt in Employee Benefits Division 3122 reports that many Sandians, or their families, wait until an emergency to find out that they have misplaced insurance and other certificates. Or that beneficiaries haven't been changed as had been planned. Here's a checklist of documents relating to your benefits that you should have, and information on them that should be current.

Health Care — Certificate of Group Policy 13002M (form PF 13745), issued in your name and dated Aug. 1, 1969, or later with rider, effective Jan. 1, 1970. The record of dependents covered by this policy is maintained in the Benefits Division, orgs. 3122 and 8236, and should be updated by you as changes occur. Also needed: an ID card in your name; dependents' cards are usually not essential but can be obtained in the Benefits offices.

Group Life Insurance — Last July a folder was distributed to everybody that described the three group life insurance policies. (Benefits offices have extra copies if you need one.) For the "Basic Group Life" policy, which everyone has, you should have a certificate from Prudential for Group Policy G-90373, issued in your name, and showing beneficiaries. If beneficiaries have been changed, riders should be attached indicating these changes.

In the "First Supplemental" policy, whose premiums are now fully paid by Sandia, you should have a Prudential certificate for Group Policy G-91325, issued in your name and showing beneficiaries. If beneficiary changes have been made, they

are shown on the final page of the policy.

Finally, for the "Second Supplemental," whose premiums you pay, you should have a group insurance certificate rider to group policy G-91325 (the First Supplemental policy). This is a half sheet, issued in your name, with provision for listing the beneficiaries; riders show any changes in beneficiaries.

Retirement Income Plan — An individual certificate is not issued until you retire. However, records relating to your retirement benefits, which show beneficiary and percent of participation in the variable annuity option, are maintained in Benefits Division. A brochure on the retirement plan was distributed last month.

Long Term Disability — Individual certificates will soon be issued and a booklet describing the plan was distributed last September.

Personal Benefit Statement — Each February you receive a Personal Benefit Statement which shows your benefits, their cost to you and Sandia, a projection of your annuity to ages 60 and 65, and the status of your retirement and variable annuity accounts. By saving these statements, you can compare benefit changes from year to year.

Windfall In 2nd SGLI Four Months for Free

Are you carrying the second Supplemental Group Life Insurance policy? Then here's a goodie. Because of favorable experience since inception of this group policy in February 1967, it has become possible to waive premiums for the next four months (December through March). So you'll be getting a few extra bucks each payday during those months.

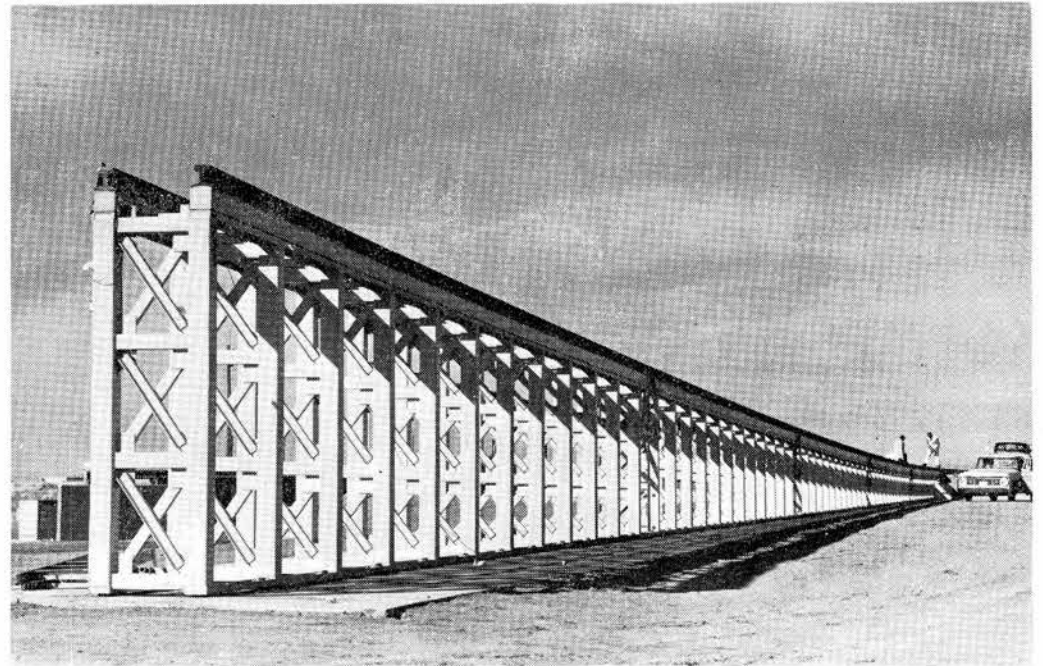
Announcement of the premium waiver comes from Dean Irvin, head of Employee Benefits Division 3122, who emphasizes that this is a one-shot action. Future premium waivers, if any, would continue to depend upon experience. About three-fourths of the Sandia population now carries the policy. If you wish to enroll, contact Employee Benefits. Medical proof of insurability is required.

LAB NEWS

VOL. 22, NO. 24

NOVEMBER 20, 1970

SANDIA LABORATORIES · ALBUQUERQUE NEW MEXICO & LIVERMORE CALIFORNIA



TWO DEGREE UPWARD launching ramp was used in the test conducted this week on Sandia's rocket sled track. By changing the support structure, the 300-foot addition to the track can be sloped upward one or two degrees, and downward one-half degree.

Up, Up and Away

A Lot Happens In a Little While On Sandia's New Launcher

Rockets pushed a nose cone down the mile-long rocket sled track, then up and off a roller-coaster-like ramp for a brief free flight before it was brought down by a parachute.

Almost too fast to see, the successful rocket sled run was the first development test conducted on Sandia Laboratories' new rocket sled launching facility. The first of its type in the country, the launcher consists of a 300-foot section of rails mounted on a ramp at the south end of the 5000-foot sled track. By changing the five structural steel support sections, the rails can be sloped up or down. One set of supports slopes the track upward two degrees, another upward one degree and the other downward one-half degree. It takes about 20 hours to install a different set of supports in order to change ramp angle.

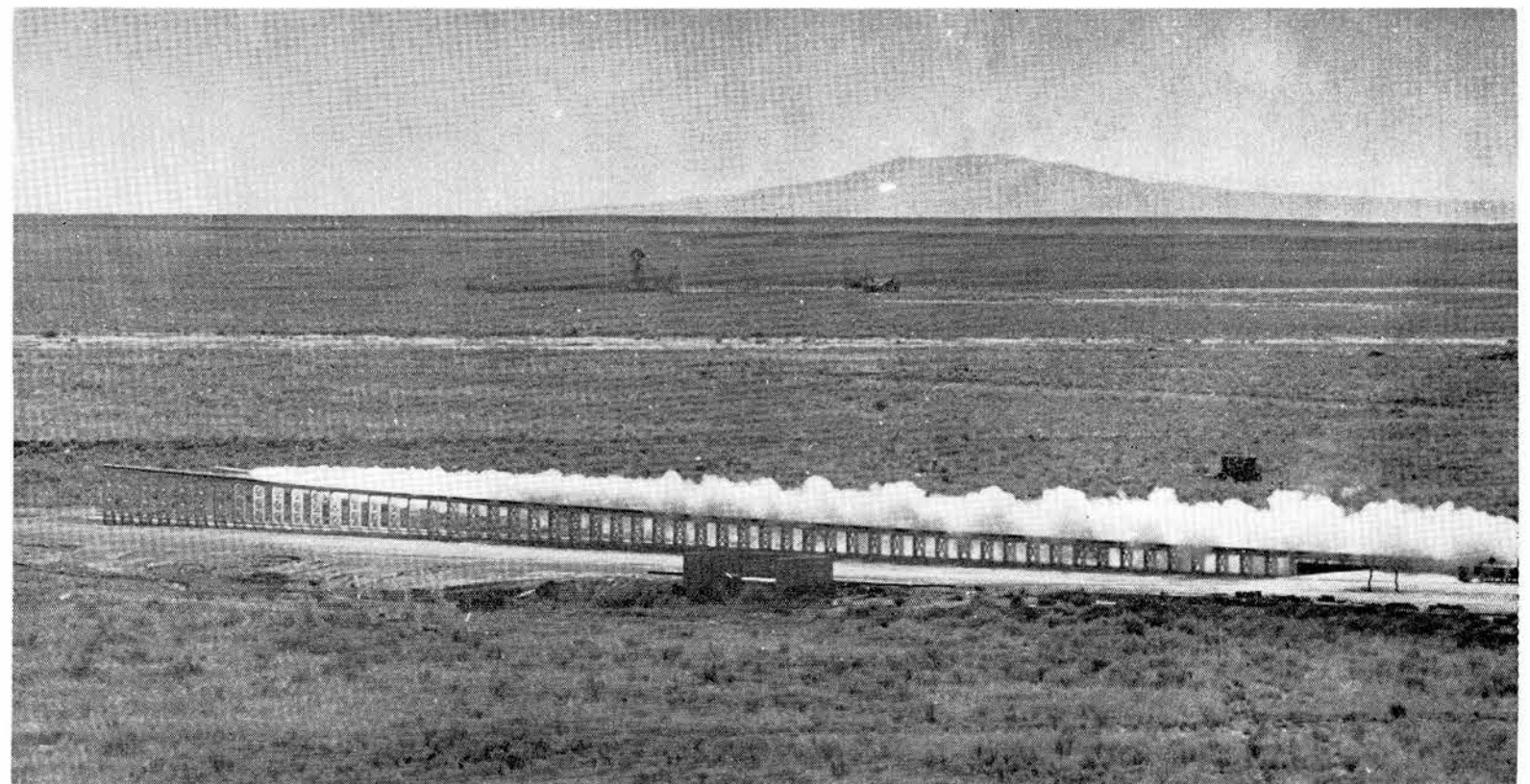
The downward curve will be used for impacting test units into concrete or other

targets. When the high-speed sled nears the end of the launching ramp, explosive bolts that hold the test unit to the sled are detonated, releasing the unit for a free flight into the target as the sled follows the track downward. Upward slopes will be used for launching test units into free flight for test of parachutes and similar hardware.

In the recent development test, the ramp was sloped two degrees upward. Although the test length extended almost two miles, the duration — only a few seconds — was too brief for spectators to see the full sequence of events.

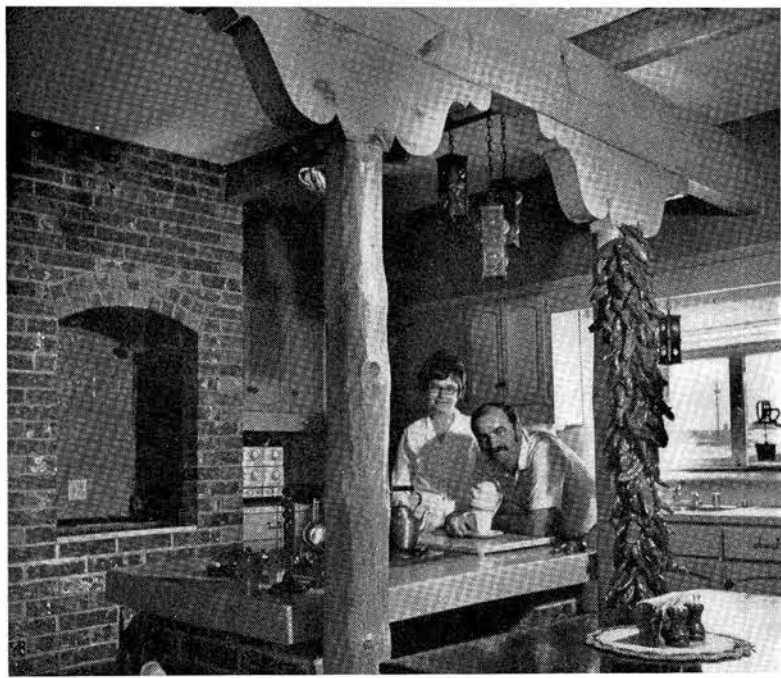
A first-stage sled using HVAR rocket boosters accelerated a sled containing a Javelin final-stage rocket and nose cone down the track to a velocity of about 1200 feet per second before the Javelin ignited. As the Javelin and nose cone continued to accelerate, the first stage sled with the

(Continued on Page Four)



UP THE RAMP streaks the second-stage sled with a Javelin rocket and nose cone. Shortly after the sled left the ramp to become

airborne, the sled's shoes were blown off and the spent rocket booster tumbled to earth. The nose cone was recovered downrange.



A BRIGHT RISTRA adds the right note to the remodeled kitchen in the historical Don Felipe residence in Belen. Owners Sue and Gordon Snidow (3417) have done much of the work themselves.



ORIGINAL floors and ceilings plus double adobe walls are features of Gordon Snidow's (3417) restored living room. Windows look out to an enclosed patio which once was under roof. Doorway leads to a large dining room.

Don Felipe Home

Artist Turns Laborer to Restore Large Adobe Hacienda in Belen

Imagine having in your home a main hall 92 feet long. Or an enclosed courtyard large enough to protect many of the citizens of Belen from raiding Indians.

Those were features of the Don Jose Felipe Chaves residence, but Gordon Snidow (3417), the present owner, reports that rebuilding a run-down adobe house more than 100 years old isn't all fun and games.

Don Felipe was a wealthy banker, sheepman, merchant, and landowner, known for his hospitality. His estate at Belen included a general store, stage coach stables (horses were changed here on the Santa Fe-Chihuahua, Mexico, line), and the large house, itself surrounded by about 700 feet of iron picket fence.

Although the house is now rendered in territorial style, it originally had a high pitched roof with dormer windows and a widow's walk. The roof gave the house the appearance of having two stories, but the superstructure actually covered an attic.

When Gordon and his wife Sue became owners two years ago, the store had been leveled to make room for an auto sales yard, the stables had also disappeared, the 50 acres of the estate — which remained intact as late as 1936 — had dwindled to two and a half acres, and the impressive picket fence had presumably been scrapped during World War II.

But there were also two important changes from a visual standpoint. The house had been converted into small apartments (there had been six baths and six kitchens but no plumbing fixtures remained) and in the early 1940's the roof burned away completely. What remained was a U-shaped, thick-walled adobe building, with wooden floors in various degrees of deterioration, and ceilings covered with plasterboard. A wall had been added to make a room out of one end of the long hallway, and the remainder of the hall had been converted to an enclosed patio. But Gordon had two things going for him: the structure had a concrete foundation and the title to the land was clear. (Both of these are critical factors if you plan to buy an old adobe house.)

The biggest job — and the biggest surprise — had to do with the ceilings. "I bent a five-foot wrecking bar getting the plasterboard and chicken wire off the ceilings, but above them the boards and vigas were un-

damaged although charred black," Gordon recalls. Before any refinishing could be done, the burnt layer had to be scraped off with a wire brush.

The plumbing, electrical work, brickwork (except for floors), and cabinets were contracted out. As an artist, Gordon knew how to finish wood, but he had never done plastering or woodworking. "Whenever I needed any wood, I had to check one of my 'handy man' books to make sure I was ordering the right kind," he says. Sue and their three children have helped with painting and many other tasks.

At the present time the living room, dining room and kitchen are finished, and the den, two bedrooms and one bath are liveable but not completed. Eventually there will also be a family room, three more bedrooms and two additional baths. They plan to cover the patio (22 x 70 feet) to create an indoor garden. At the far end of the courtyard are three additional rooms, one of which Gordon uses for his studio.

The project has had its lighter moments. "Whenever the workmen hit a foreign object in the walls, they'd speculate that it was a box of gold," Gordon recalls. "No one knew whether to make the drapery rods parallel with the ceilings or with the floor — both sloped several inches in opposite directions," Sue recalls. And the residents of Belen have expressed pleasure, curiosity, and doubt about the Snidow's sanity in taking on the venture.

There's plenty of work yet to be done, but the family is living on the premises and enjoying their corner of New Mexican history.



FAMILIAR LANDMARK in Belen is the large adobe home built by Don Jose Felipe Chaves more than 100 years ago. Peeling paint on the outside belies the tasteful restoration underway inside.

Pollutor -- Who Me?

Nowadays being against pollution is like being for the flag and motherhood, and woe to the politician who fails to sense this. But if we're really serious about the subject, reducing pollution has to be more than a matter of committee resolutions — each of us must become personally involved because in one way or another we all contribute to the problem. Here are some helpful steps you as an individual can take.

- Keep your car tuned up to reduce hydrocarbon and carbon monoxide emissions.
- Check the operating systems of equipment which burn fuel for power such as mowers, motorcycles or scooters, boats, etc.
- Be extremely careful with matches or fire around any wooded or brush area. Fires are a grave source of both air and water pollution.
- Do not use any body of water for a dump. On camping or fishing trips, don't throw garbage or trash of any kind in the water. If receptacles are not furnished, take one with you.
- Take measures to prevent wind erosion on your property, thus minimizing dust in the atmosphere.

- Do not spray chemical compounds on plants, shrubs, and trees in your yard in windy weather.
- Never deposit any solid, inorganic material such as cans in sewers or drainage areas.
- Do not discharge oils and toxic materials such as acids and paint thinner down your drain.
- Do not burn leaves or other trash.
- Do not wash cigarette butts and match sticks down your drain or flush them down the toilet.
- Report flagrant violations of pollution laws to the city health department.
- Urge organizations and civic groups to which you belong to investigate projects they could adopt that would help alleviate pollution.
- Support municipal anti-pollution programs, recognizing that such programs have a price tag and will cost you money.
- Save aluminum (cans, foil, TV dinner pans, etc.), newspapers and glass, thereby reducing amount of trash and making a little money besides (see LAB NEWS, July 31, 1970 for buyers of the stuff).

Ice—A Hot Safety Item

The common ice cube can kill pain almost instantly, help prevent infection, aid greatly in controlling bleeding and costs almost nothing.

For a sliver in a sensitive fingertip, put the finger on ice until numb and lift the sliver out painlessly with a needle sterilized in a match flame.

Before an immunization shot, place an ice cube on the area for about 15 seconds, dry with tissue, swab with alcohol, and inject while the spot is still numb.

For a burn, place the wound in cold water in which an ice cube or two have been placed. Or, apply ice directly over the burn until the sting is no longer felt when the cube is removed. More important, there will be very little swelling, and blisters will not appear. Healing will also be more rapid.

Ice stops bleeding — not only externally but under the skin from a bruise. Black and blue discoloration is due to leakage of blood from torn blood vessels. Ice restricts the leakage until clotting takes place.

A cube against a wound until the doctor arrives practically eliminates the danger of infection. Ice is not dangerous because it refrigerates the tissues, but does not freeze them. The temperature of the tissues is lowered to between half a degree to five degrees above freezing.

Events Calendar

- Nov. 20—Old Town Park Benefit Dance. Tickets (\$2 per couple) available at door. Old Town Boys Club, 9 p.m.
- Nov. 21—Jose Molinas Ballet Espanol. Popejoy Hall.
- Nov. 22—Cebolleta Canyon (on slopes of Mt. Taylor). N. M. Mountain Club. Leader, Ray Nethers, 344-8437.
- Nov. 24—Duke Ellington Orchestra, San Felipe Church benefit. Civic Auditorium, 8 p.m. Free cocktail party with \$8 and \$9 tickets. For information, 243-4628.
- Nov. 26—Embudo Canyon. N. M. Mountain Club. Leader, Will Snyder, 299-4172.
- Nov. 29—Comedy "Forty Carats." Popejoy Hall.
- Nov. 29—San Juan Canyon. N. M. Mountain Club. Leader, Bill Grohe, 243-1051.
- Dec. 1—UNM Orchestra, Popejoy Hall, 8:15 p.m.
- Dec. 5—Shalako dances at Zuni Pueblo. YWCA usually sponsors chartered bus trip to this event.

Authors

- M. Berman (9112), "Nuclear Resonance Fluorescence in Xe¹³¹," October 1970 issue, PHYSICAL REVIEW.
- G. J. Kominiak (5332), E. G. Spencer and H. J. Guggenheim (both BTL), "Barium Manganese Fluoride, A New Crystal For Microwave Ultrasonics," October 1970 issue, APPLIED PHYSICS LETTERS.
- C. W. Harrison, Jr. (2627), C. D. Taylor (Mississippi State University), E. A. Aronson and Margaret L. Houston (both 2625), "An Accurate Representation of the Complete Electromagnetic Field in the Vicinity of a Base-Driven Cylindrical Monopole," November 1970 issue, IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY.
- L. C. Beavis (2613), "Real Leaks and Real Leak Detection," Vol. 20, No. 6, VACUUM.
- P. J. Chen (1721) and E. K. Walsh (5161), "Shock Amplitude Variation in Polymethyl Methacrylate for Fixed Values of the Strain Gradient," Vol. 41, No. 8, JOURNAL OF APPLIED PHYSICS.
- D. A. Freiwald (5242), "Shock Wave Velocity Enhancement in Shock Tubes with Solid Explosive Drivers by Employing H₂-O₂ Mixtures as the Driven Gas," Vol. 41, No. 7, JOURNAL OF APPLIED PHYSICS.
- L. M. Lee (5161), R. P. May (5163), and T. R. Guess (5314), "Some Dynamic Mechanical Properties of Distended Carbons," Vol. 8, No. 8, AIAA JOURNAL.
- T. A. Allen (4221), "Chemical Milling's New Image," Sept. 24 issue, IRON AGE.
- W. W. Allison (3351), "Design Reduces Hazards of Sitting," September issue, AMERICAN SOCIETY OF SAFETY ENGINEERS JOURNAL.

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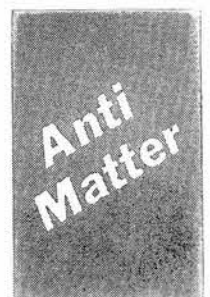
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Bill Laskar is Photographer
Norma Taylor/All The Rest



SMIDLEY, MANAGEMENT HAS ASKED ME TO TALK TO YOU ABOUT YOUR APPEARANCE. I'M SURE YOU UNDERSTAND WHY.



NO, NOT REALLY. YOU SEE...



I'M FOSTER, NOT SMIDLEY.

HOW STUPID OF ME! I KEEP FORGETTING SMIDLEY IS THE ONE WITH THE BEGONIAS.



ack wilson © 1967

LIVERMORE NEWS

VOL 22, NO. 24

SANDIA LABORATORIES

NOVEMBER 20, 1970



"JOIN THE HOLIDAY FUN at the Sandia Christmas Dance," says Toni Haws (8212). This year's dinner/dance will be held at Hotel Claremont in Berkeley, Dec. 11.

Annual Christmas Dance Slated For Hotel Claremont Dec. 11

Tickets are on sale for this year's Sandia Laboratories Livermore Christmas Dance to be held at the Hotel Claremont in Berkeley Friday evening, Dec. 11. The annual holiday party is open to Sandia and LRL employees and their guests.

The Employee Dance Committee has reserved both the Garden Room and the Terrace Lounge at the Claremont for the evening. Refreshments will be available beginning at 6:30 p.m., followed by a buffet dinner at 8 p.m. Dancing will continue from 9 p.m. to 1 a.m. to the music of Maury Wolchan's orchestra with Lori English, featured vocalist. Cost of the dinner/dance is \$15 per couple.

A number of special features are included

again this year. Baby-sitting service will be available at the Claremont for children under 12 years of age. One hundred twenty-five rooms have been reserved at \$5.50 per couple for those who wish to spend the night. For those with rooms who wish to stay an extra night, the cost of the rooms remains the same.

Tickets for the dinner/dance and baby-sitting service may be obtained from: Carolyn Kersey, Bldg. 911 Lobby; Ann Pollard, Bldg. 912, Rm. 141; Nancy Hunt, Bldg. 912, Rm. 242; Helen Bond, Bldg. 913, Rm. 106A; Juavana Stark, Bldg. 916; Ginger Common, Area 8, Bldg. 973; Marge Mederios, Mobile Office No. 5, and Barbara Carter, Employee Benefits.



CHRISTMAS CONTAINER CONTEST UNDERWAY—Sandians at Livermore are again pooling contributions to help needy families in the area at holiday time, rather than exchanging greeting cards. To collect the monies, which will be turned over to the Livermore-Amador Valley Emergency Fund Center, secretaries throughout the Laboratories are competing for the best decorated or most unusual container. A trophy goes to the winner and a plaque to the winner's division. Entries must be submitted prior to judging on Dec. 4, with deadline for contributions Dec. 21. Winners of last year's contest (shown above) may spark some ideas for entries.

Flyer Plates—The Real Thing, Almost, In Materials Testing

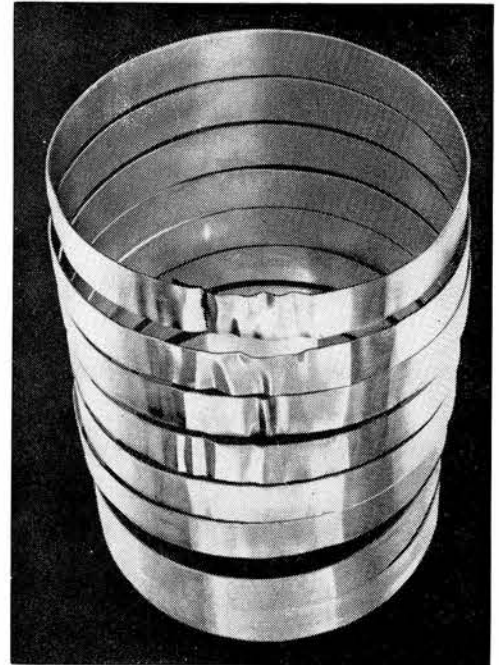
"Since we introduced the magnetic flyer plate technique in 1955," says Gayle Cain, supervisor of Simulation Division 8343, "we have developed it into a vastly improved and refined system. It has now evolved into an important laboratory tool for simulating the effects of nuclear weapon radiation on structures."

Be it a cylinder, cone or ring, the Simulation Lab can measure how the structure responds to impulses varying from less than 1000 to over 100,000 taps (a tap is 14.5 pound-microseconds/square inch). Peak shock pressures accompanying these impulses range from 1-300 kilobars (a kilobar is 14,500 pounds per square inch) and last 50-500 nanoseconds (one nanosecond is a billionth of a second). Since flyer plate thickness and velocity — both controllable — determine the amount of impulse, virtually any level of impulse and pulse shape can be achieved.

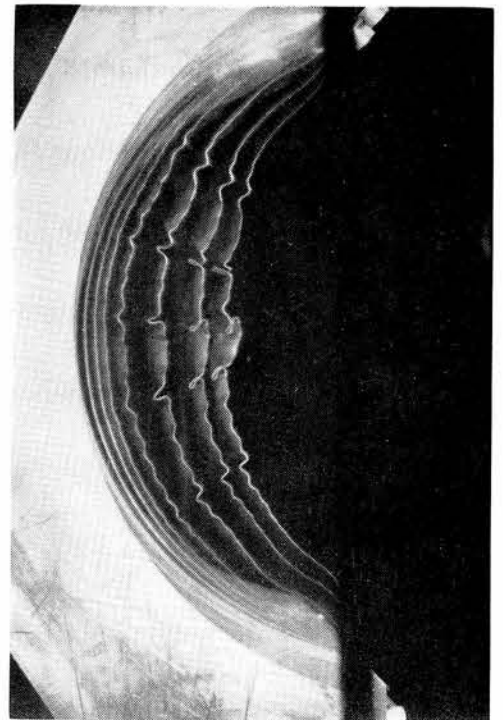
"In a typical test," explains Jerry Rohwein (8343), "a copper flyer plate 10 mils thick (.0010 of an inch) and three inches wide attains a velocity of one-and-one-quarter millimeters per microsecond (2813 miles per hour) within seven microseconds, after being accelerated by three million amperes of current. When the flyer plate hits a steel target, a pressure pulse of 260 kilobars lasting 100 nanoseconds is produced."

The current pulses are supplied by fast-discharge capacitor banks. The banks — charged from 5000 to 30,000 volts — are connected to solid dielectric or multi-channel air gap switches. Upon closing the switch, current up to over four million amperes flows through the flyer plate and accelerates it.

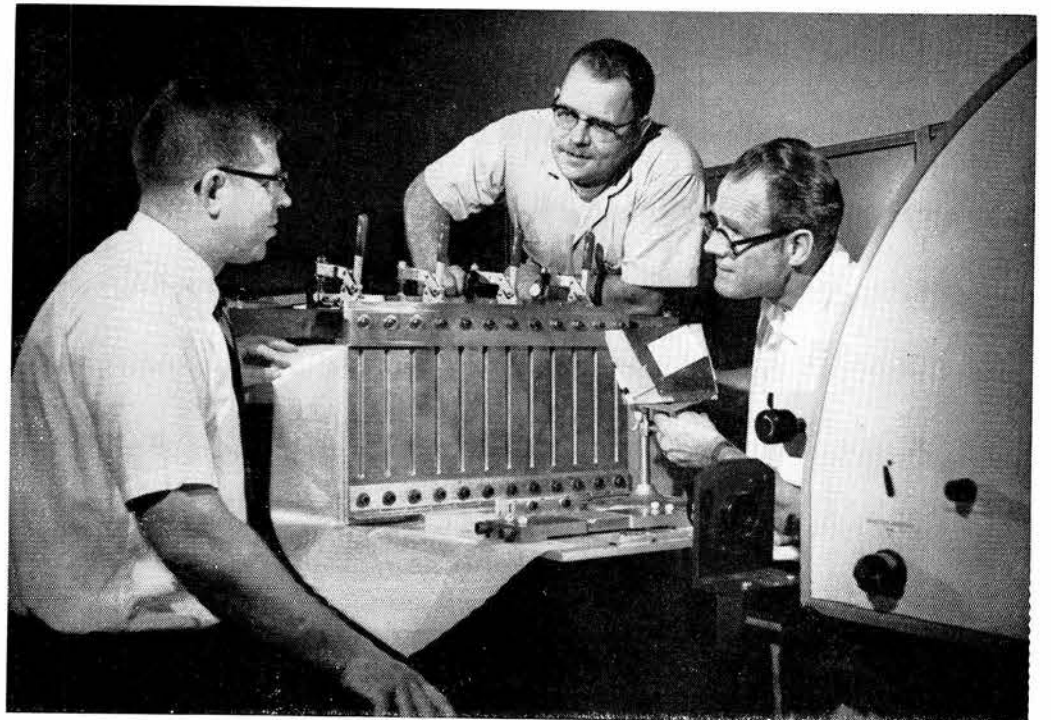
Optical instrumentation — designed by Paul VanDyke of Photography Lab 8231-3 — measures the flyer plate velocity and the structure's response. Laser-aligned, high-speed streaking and framing cameras coupled with a stroboscopic light source photograph phenomena at time intervals of 10 to 500 microseconds. During these time intervals, images of the event are obtained in as little as one-half microsecond.



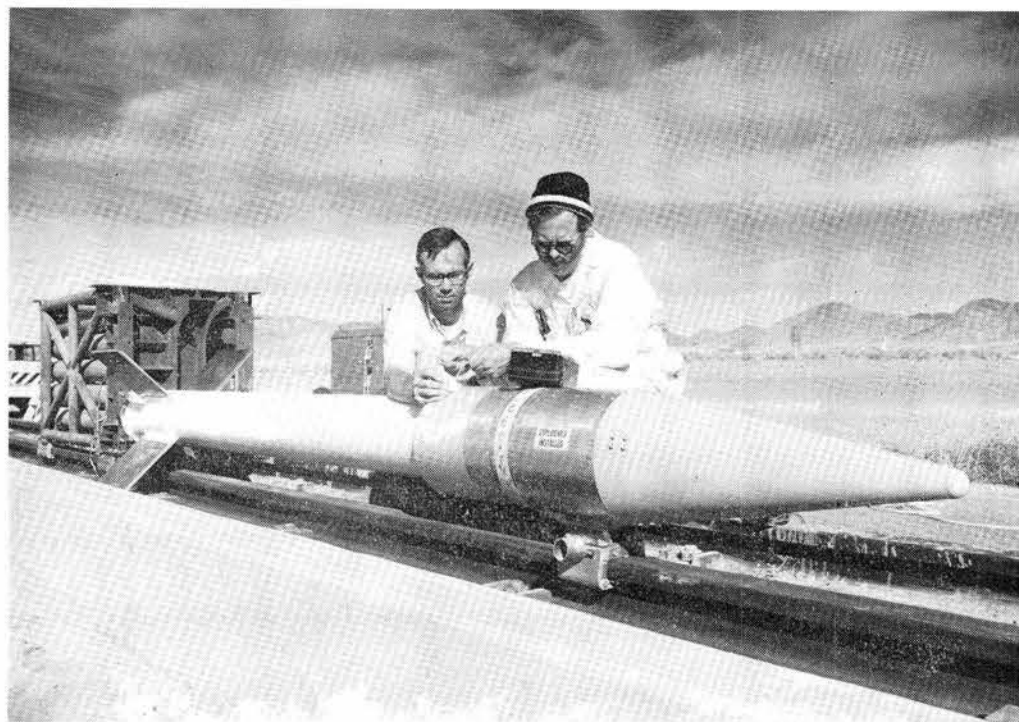
ALUMINUM RINGS, BUCKLED AND OTHERWISE—Flyer plate range and effect of impacts is illustrated here, from 1400 taps (bottom) to 5000 taps (top). Buckling threshold of rings is 2200 taps.



FLYER PLATE VS. ALUMINUM RING—Using stroboscopic light source, this picture shows progressive buckling of ring under impact of flyer plate.



FLYER PLATE IMPULSE TEST is discussed by (l to r) Jerry Rohwein, Jim Duggar (both 8343) and Ray Foster (8231-3). Using radiation simulation techniques developed at Sandia Laboratories Livermore, structures or materials can be subjected to impulses varying from 1000 to 100,000 taps which create shock pressures of 1 to 300 kilobars over periods of 50 to 500 nanoseconds.



MAKING FINAL ADJUSTMENTS on the Javelin rocket are Jack Windsor (right) and Dave Preston (both 7325). The dual sled was used this week in the first development test on the new launching ramp addition to Sandia's rocket sled track. First-stage sled with HVAR boosters is in the background.

Continued from Page One

Sandia's New Launcher

spent rockets was stopped about 900 feet from the end of the track by a water brake.

Meanwhile the Javelin and nose cone continued accelerating down the track, up the launching ramp and off the end at about 2300 feet per second. As soon as it was airborne, C-shaped steel shoes that held the rocket to the track were blown off by exploding bolts to eliminate drag.

After accelerating to some 5000 feet per second, the rocket and nose cone were separated in mid air by an accelerometer device that sensed rocket burnout and detonated latch pins which held two doors

flush with the rocket body. The doors, under the tension of coil springs, flew open, causing the spent rocket to tumble down. A parachute then blossomed from the nose cone to cushion its landing.

Advantages of the new launching ramp include using simplified expendable sleds that are built around a rocket booster, which serves as the sled body. Steel legs and C-shaped shoes are attached to the rocket body, and the item to be tested, in this case a parachute, is housed in a nose cone or payload section. The sleds can be built for about one-fifth the cost of ejector-type sleds normally used in parachute tests. In addition, they weigh less, have less aerodynamic drag and require fewer rockets to attain desired velocities.

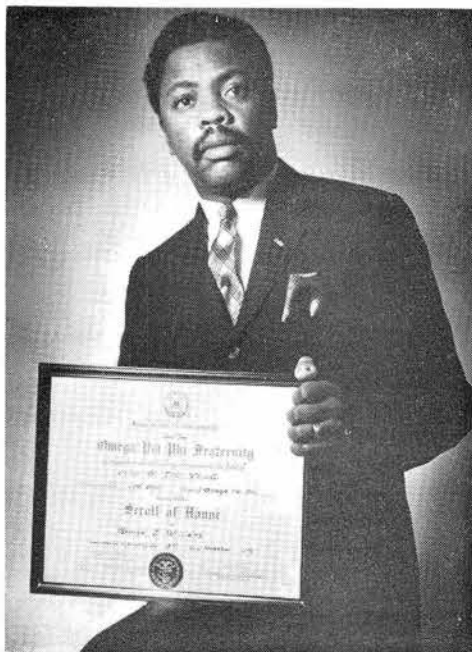
Don Bauder, supervisor of Track and Guns Division 7325, developed the initial requirements for the new facility. Project engineers for the environmental testing organization were John Finer (7284) and Bill Kampfe (7325). Cecil Morrisett (4543) was the plant engineering project engineer. David Preston (7325) was project engineer for the first development test conducted last week.

J. P. Hickerson (5535), "The Effect of Phase Stability on Fatigue Crack Propagation" and "The Influence of Strain Cycling Response on Fatigue Crack Propagation"; Bruce McLaughlin (5531), "Mathematical Simulation of Stress Corrosion Cracking"; C. E. Albright (5531), "The Low Strain Tensile Behavior of Mulberry Alloy (7.5% Nb, 2.5% Zr, Balance U)"; G. J. Jones (5321), "Lateral Growth in Solid-Solid Phase Transformations." Fall Meeting of the Metallurgical Society, Oct. 19-22, Cleveland.

H. P. Stephens (5322), "An Isothermal Liquid-Gas Phase Change Calorimeter for High Temperature Enthalpy Measurements," 25th Annual Calorimetry Conference, Oct. 19-22, Gaithersburg, Md.

R. L. Gerlach (5331), R. L. Park (5331), and J. E. Houston (5332), "Applications of Ionization Spectroscopy to Surface Analysis"; D. M. Mattox and G. J. Kominak (both 5332), "Incorporation of Helium in Deposited Gold Films"; and R. L. Park and J. E. Houston, "Anomalous Fine Structure in the Soft X-Ray Appearance Potential of Non-Metals," 1970 American Vacuum Society Meeting, Oct. 20-23, Washington, D.C.

J. T. Grissom and G. W. McClure (both 2612), "Energy Distributions of Ions from Pulsed Vacuum Arcs"; D. L. Mangan (2612), "Plasma Expansion into a Field Free Vacuum Environment"; A. W. Johnson (5243), "The Rotational Distribution of He⁺ Resulting from Recombination of He⁺ and He⁺ in a Helium Afterglow"; M. A. Gusinow (5243), "Role of + He⁺ in the Recombination of 300°K Helium Plasma"; G. C. Tisone (5233), "Energy and Angular Distributions of Electrons Ejected from N² by Electron Impact"; F. W. Bingham (5232), "Delayed Coincidence Study of O⁺+ Ne Collisions at 50-200 keV"; and F. R. Truby (5233), "Negative Ion Decay in Photoionized Bromine," 23rd Annual Gaseous Electronics Conference and the Second Arc Symposium, Oct. 20-23, Hartford, Conn.



GEORGE WILLIAMS
"Man of the Year"

George Williams Named Fraternity 'Man of the Year'

George Williams, a programmer in Product Data Systems Division 9413, was recently named "Man of the Year" by the Nu Rho Chapter of Omega Psi Phi fraternity. George directed local fund raising projects which provided a tuition, fees and books scholarship to a UNM freshman.

The fund is called the Robert H. Lawrence, Jr. scholarship. Lawrence, a black astronaut who died in a Starfighter crash in 1967, was a charter member of the Nu Rho chapter.

Omega Psi Phi is a national social and service organization predominantly for blacks. George is vice president of the statewide Nu Rho graduate chapter. He received the "Man of the Year" award during the group's "Achievement Week" activities which recognized achievements of the black community. It was presented by Charles Watkins (9341), chapter president.

George has also served as chairman of an eight-state regional conference of Omega Psi Phi. Last August he was a delegate to the national convention in Pittsburgh.

George has been at Sandia since 1966 except for a year spent in Korea as a member of the New Mexico Air National Guard. He was a captain in the unit.

Take Note

Soila Candelaria (2318), who used to be a vocalist with a couple of local bands and appeared at La Roc, is hoping to organize a new group. This would be a versatile combo, she says, playing all types of music. She is looking for a piano player (or electronic organ), as well as trumpet, electric guitar and saxophone players. If interested, call her at 877-3738.

Don Hurt (1613) emerged champion of the Class A singles horseshoe tournament recently. Class B singles champ was Joe Brooks (7363) who was also the tourney director. Class C winner was Joe Baldonado (4252).

In the doubles tournament, Class A winners were John Hiller (2334) and Burt Van Sickle (4213). Louie Flores (7523) and Tony Jojola (4252) took Class B championship.

"Acoustic Emission" will be presented by Alan Beattie (5133) at the 5100 Staff Seminar Dec. 1. The seminar meets at 8:30 a.m. in rm. 201 of bldg. 806.

Howard Shelton, supervisor of University Relations Division 3134, was co-chairman recently of the Fifth Annual Meeting of the American Society for Engineering Education. The three-day meeting was held in Albuquerque Nov. 4-6. Paul Robertson (3134) was treasurer for the event.

Candidates for the New Mexico legislature who were victors in the recent election included Jim Caudell (7623), Bill Warren (1721) and Tom Hoover (1222).

The Sandia District of the Kit Carson Council needs volunteer men who can spend six hours monthly working with other adult leaders in Boy Scout programs for citizenship, conservation, and goodwill. If interested, contact Don Hosterman (3134), tel. 256-9562.

Congratulations

Carl Lundbom (8274) and Pat Stanley married in Livermore, Oct. 24.

Sympathy

To Robert Thompson (1722) for the death of his mother in Dayton, Ohio, Oct. 30.

Speakers

B. W. Duggin and R. I. Butler (both 7342), "Use of Manganin Gages to Measure Sweeping Shock Pressure Loads"; D. M. Darsey (7524), "Calibration of Systems by Dynamic Response Analysis"; C. G. Murphy, O. J. Burchett and C. W. Matthews (all 7362), "The Strain Analysis of an Aluminum Cylinder by Holographic Interferometry, 25th Annual ISA Conference, Oct. 26-29, Philadelphia.

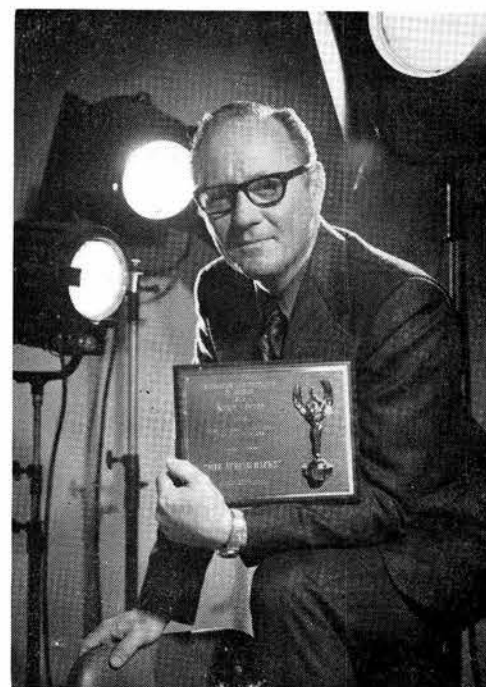
J. V. Otts (7324), "Methods Used to Realistically Simulate Vibration Environments"; L. O. Seamons (7325), "Isotope Fuel Impact Facility"; D. O. Smallwood (7324), "A Method for Predicting Structural Responses from Lower Level Acoustic Tests"; C. G. Coalson (7343), "An Aerial Cable Test Facility Using Rocket Power"; K. M. Timmerman (7325), "A System for Impact Testing Nuclear Fuel Capsules with Rocket Sleds"; A. F. Witte (7324), "Specification of Sine Vibration Test Levels Using a Force-Acceleration Product Technique" and "Dual Specifications in Random Vibration Testing. An Application of Mechanical Impedance"; and S. L. Fluent (7323), "Gas Spring Firing and the Soft Recovery of a Hard-Wire Instrumented 155mm Shell," 41st Shock and Vibration Symposium, Oct. 27-29, Colorado Springs.

P. D. Wilcox and D. A. Buckner (both 2317), "Effects of Calcining on the Firing of Lead Zirconate-Lead Titanate Ceramics"; G. H. Haertling (2317), "Hot Pressed Electrooptic Ceramics in the (Pb,La) (Zr,Ti)O₃ System," American Ceramic Society, Oct. 27-30, San Francisco.

A. F. Witte (7324), "A Force-Acceleration Control Technique for Vibration Testing," ISA Convention, Oct. 27-30, Houston.

C. B. Norris (5112), "Picosecond-Rise-time Pulse Applications of Electron Beam-Semiconductor Devices"; C. W. Gwyn and B. L. Gregory (both 2653), "Optimization of Transistor Neutron Tolerance," IEEE Electron Devices Meeting, Oct. 28-30, Washington, D.C.

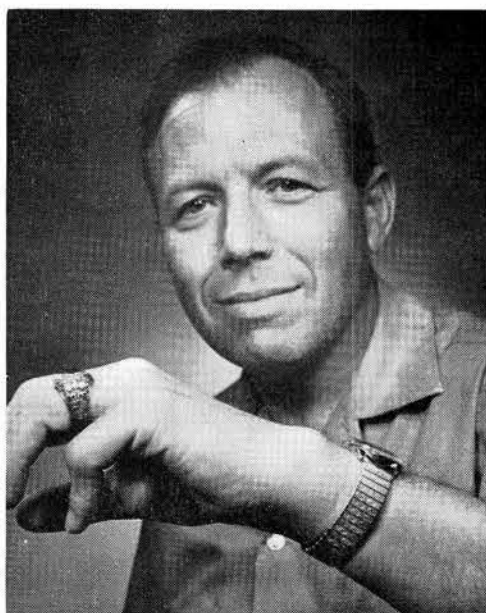
J. W. Poukey (5241), "Numerical Simulation of a Laboratory Ion Source," Fourth Conference on Numerical Simulation of Plasmas, Nov. 2-3, Washington, D.C.



"OUR ACHING BACKS," a 14-minute safety film produced by Motion Picture Division 3454, was awarded first place in a recent competition of the Information Film Producers of America. Chuck Cockelreas, writer-director, displays the plaque. The film is available for safety meetings and for showing to outside groups. Call 264-7631 to reserve the film.

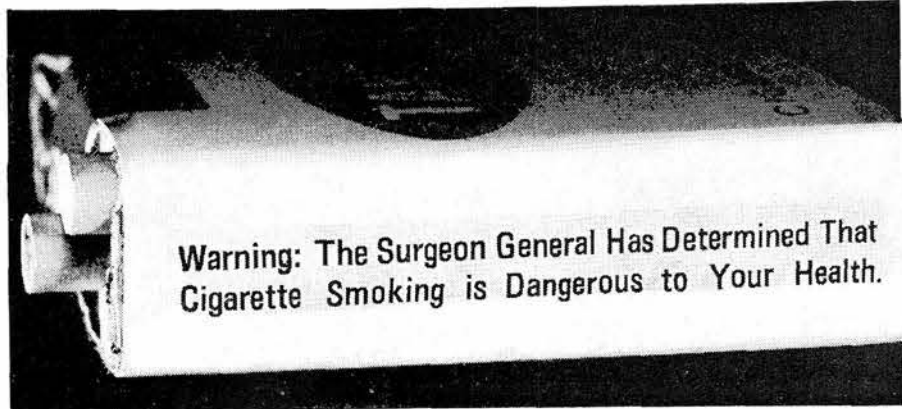


NEW RECORD by singer-guitarist Denny Gallegos (3428) features "Tiny Bubbles" on one side "Day Dream" on the other. The record is receiving good play on local radio and good sales in statewide shops. Denny recorded the tunes on the Demetrius label and hopes to record others soon. He entertains weeknights at the Downtowner.



ANNAPOLIS CLASS RING, lost by Bill Shepherd (7414) on a train in July 1946, was returned recently by the son-in-law of the man who found it. It had lain forgotten for 24 years in a drawer where the man had tossed it. Bill's name was engraved inside the ring, but it took a letter to the Navy Department to locate Bill's address. Bill graduated from Annapolis in 1945, served 13 years in the Navy, and retired as a Lt. Cmdr.

Introducing our new improved warning:



Warning: The Surgeon General Has Determined That Cigarette Smoking is Dangerous to Your Health.

By Act of Congress, the above warning must be placed on all cigarettes manufactured for sale in the United States on or after November 1, 1970.

At Last: A Cigarette Warning That Sounds Like a Cigarette Warning Should

The nation's cigarette smokers will shortly begin reading a new and sterner health warning on their cigarette packages. By an Act of Congress signed into law by President Nixon last April 1, the new warning will read: "Warning: The Surgeon General Has Determined Smoking Is Dangerous To Your Health." It replaces the current warning which says: "Caution: Cigarette Smoking May Be Hazardous To Your Health."

The stronger wording is required under the Public Health Cigarette Smoking Law and will apply to all cigarettes manufactured for sale in the United States after Nov. 1, 1970. The law also bans all cigarette advertising on radio and television beginning Jan. 2, 1971.

Four times, beginning in 1954, the Public Health Service has forwarded reports to the Congress on the health hazards of cigarette smoking.

One of the new findings reveals in its most recent report, for the first time, the extent of the relationship between cigarette smoking and illness. A national survey showed that workers who smoke as much as a pack of cigarettes a day spend a third more time away from their jobs because of illness as people who never smoked.

Among other facts and conclusions which emerge from the reports to Congress:

The risk of death is about 70 percent higher for men who smoke cigarettes than for men who do not. The risk is significantly higher for women who smoke cigarettes than for those who do not.

The greater the number of cigarettes smoked daily, the higher the death rate.

Life expectancy among young men is reduced by an average of eight years in heavy (over two packs a day) smokers and an average of four years in light (less than half a pack a day) smokers.

Cigarette smoking is a major cause of lung cancer. The risk of developing the disease increases with the duration of smoking and the number of cigarettes smoked per day. The incidence of lung cancer would be reduced dramatically if people stopped smoking cigarettes.

Cigarette smoking is the most important cause of chronic bronchitis in the U.S. and greatly increases the risk of dying from bronchitis and emphysema.

Cigarette smoking can contribute to the development of cardiovascular disease, and particularly to death from coronary heart disease.

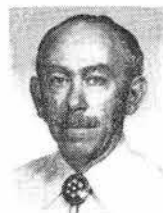
Women who smoke during pregnancy run a greater risk of unsuccessful pregnancies than do non-smoking women.

SERVICE AWARDS

20 Years



Charles Appel
1590



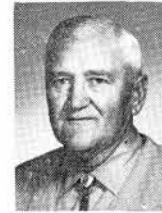
Donald Barack
4253



Gertrude Butler
7225



Theodore Gourd
7412



Howard Hadlock
3520



Rose Hainlen
4152



Marcus Herrera
4252



Charles Hines
3428



James Hollon
4513



Edwin Inglat
9225



Elmer Irving
4137



Cecil Mock
7434



Earl Robbins
3522



Henry Roeder
4232



Pete Saavedra
4513



Thomas Thompson
4612

Speakers

R. R. Davies (4362), "A Review of the Use of Basic Ordering Agreements at Sandia Labs," 14th Annual AEC Contractors Purchasing Agents Conference, Oct. 13, Albuquerque.

J. C. Swearingen (5165), "Cyclic Deformation and Crack Nucleation in Copper-Alloy Bicrystals," 1970 Metal Conference, Oct. 19-22, Cleveland.

L. S. Nelson (5224), "Laboratory Preparation of Chondrule-Like Spherules with CO₂ Laser: Origin of Chondrules," 33rd Annual Meeting, The Meteoritical Society, Shenandoah National Park, Va., Oct. 27-30.

W. E. Alzheimer (1517), "Flyer-Plate Loading of Circular Rings," A. L. Stevens (5133), "The Effect of Precompression on the Dynamic Fracture Strength of Metals," and K. T. Kavanagh (5165), "Extension of Classical Experimental Techniques for Characterizing Composite Material," Fall Meeting of Society for Experimental Stress Analysis, Oct. 18-22, Boston.

J. M. Hueter (3134), "Creativity—Choice or Chance?," Highland High School Key Club, Sept. 22, and Masonic Lodge No. 68, Oct. 15; and "Creative Development Through Value Engineering," Civil Engineering class, UNM, Oct. 26, Albuquerque.

15 Years



Phil Arnold
9424



L. F. Estabrook
2324



Werner Kuhn
7453



Eustaquio Rael
4253

10 Years

Russ Yngst 2453, Robert Coates 8124, William Carter 8274, and Virginia Mohr 8275.

LAB NEWS

PAGE FIVE NOVEMBER 20, 1970

SHOPPING CENTER

SHOPPING CENTER

SHOPPING CENTER

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SHOPPING CENTER

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
LANE coffee table, \$25; table lamp, \$10; misc. carpenter tools. Brown, 299-1934.
MINIATURE Poodle puppies, purebred, males, 2 black, 1 silver, shots, \$30. Smaller, 299-8413.
BABY CAR BED: playpen; blond cedar chest; 3 walnut end tables; modern blue vinyl chair w/ walnut arms and swivel base. Bliss, 296-3752.
REFRIGERATOR, 12 cu. ft.; tennis racket; bowling shoes, man's 9 med., new; ice skates, woman's 5; crib mattress; studio couch w/ ottoman; wicker cat bed; folding cot. Kobs, 298-9133.
HI FI phonograph, needs turntable repair. Magnavox in cherrywood console, \$25. Ashcraft, 299-1011.
ORTHOPEDIC SHOE: worn one week, "Plumb Line" straight-last; right foot; infant's size 7E, was \$13.50, sell for \$5. White, Smith, 265-5447.
BUNK BEDS, maple w/ ladder & mattresses, \$80. Haskins, 282-3748.
ENCYCLOPEDIA—World Book, 1961 edition w/ year-books through 1970, cost over \$300, sell for \$125. Barber, 299-1305.
SKI BOOTS, size 10, \$10; unicycle, \$20; coppersone electric counter-top stove, \$15. Peterson, 256-7514.

MINIATURE DACHSHUNDS, born Nov. 1, see at 1002 Lester Drive NE, Hudson, 296-3484.
2 EA. STEREO HI-FI speakers. Argos, \$30; 4-track cassette tape player, 110V AC, \$15. Denney, 268-0004.
20" SPYDER type boy's bicycle, tires w/ thornproof tubes, needs new seat & paint. Bowen, 255-8195.
1-TON drop center trailer axle w/ hubs, wheels; damaged trailer frame; gas tank, 12"x10"x30"; center seat from VW bus; Mag wheels for VW. Campbell, 268-8445.
PALOMINO HORSES, 11-yr.-old gelding & 5-yr.-old mare, dependable, well mannered. Baldwin, 877-2901.
HONDA CL350, 1970, \$525; tire chains, used once, will fit 7.00x16 or 7.50x15, \$10. Bontrager, 296-9753 after 6.
ORGAN, Thomas transistorized, Malibu model, cost \$1500, still under guarantee, includes \$100 in sheet music, must sell, \$550. Oswald, 299-2294.
HEAVY DUTY camper jacks. Newton, 255-2074.
4-CYL. Jeep motor, overhauled, cleaned & painted, \$100; extension bumper, \$15; 7.00x16 tire, rim & mount, \$25. Guidice, 268-4197.
POODLES, Toy black male & female; old TVs; misc. electronic parts. Johnson, 298-7356.
DINING ROOM SET: table w/ extra built-in leaf, china closet, 6 chairs. Verardo, 255-6385.
MOTORCYCLE, Sear's Mo-Ped, Austrian make, 48.5 cc, 1500 miles, \$110; motorcycle helmet, \$8. Moss, 298-2645.
'69 GROVES GS30011 three-piece take-down bow, 36-lb. pull, complete w/ sight & doz. aluminum arrows, \$75. Olson, 298-3795.
SKIS, '70 Hart Camaros, 200cm, never used, never mounted. Leeman, 299-9149.
HEREFORD calves, 5-7 mos. old. Causey, 299-0089.
SIAMESE & half-Siamese kittens, healthy & playful, about 9 wks. old, free, will deliver. Case, 282-3211.
PISTOL, 9mm Browning auto., new barrel, holster, extra clip, ammo. Rawlinson, 265-2700.
GE electric clothes dryer, 220V, single speed, \$55. Rozelle, 298-0396.

RUG, 9x12 oval braided, multi-colored, \$25. Young, 256-9158.
HO Train layout, landscaped w/ mountain, bridge, mesa, tunnel, 2 switches, running construction, hinged from wall for storage, \$30; Santa Fe diesel w/ 4 cars, \$15. Cover, 268-0921.
WHITE dbl. kitchen sink, \$16; elect. kitchen range, \$75. Armijo, 877-4749.
REG. ARABIAN gelding, 5-yr.-old, intermediate rider. Sharp, Placitas, 867-2815.
MINIBIKE, Benelli, 50cc, 4-spd., street & trail sprockets, \$230 or best offer. Binder, 296-9024.
DELUXE MAGNUS CHORD ORGAN; Hot Point Ironer; Panadapter scope w/ A.C. supply. Laskar, 299-1024.
HIDE-A-BED couch, gold, \$75; dinette table, white formica, \$10; drapes, 90L x 150W, beige w/ Oriental design, just dry cleaned, \$30. Sisson, 296-3883.
210 CM plastic laminated wood skis w/ micro safety bindings & poles, \$20; 19" port. B&W TV. Plummer, 243-6833.
ICE SKATES, girl's size 3 1/2, professional, hardly used, \$7.50. Robertson, 296-4613.
HO TRAIN SET, heavy duty dual control transformer two-gear engines, cars, track. Sasser, 298-1439.
IV. GE console table, h&w; 12 volt transistor ignition kit; cartop carrier. Magee, 256-1358.
IV, 17" Sylvania blond console, \$20; western chair, child's size 8-10, \$10, Beckwith English breeches, size 8-10, \$5. Bassett, 898-1840.
SPIDER BIKE, \$7; children's doublelace ski boots, sizes 5&6, \$5 each; ladies Kastinger doublelace 7XN, \$15. Kepler, 298-5652.
MOBILE HOME, '63 Detroit, 10x55, AC, skirted, 40' awning. Best offer. Wilshusen, 877-6673.
MAGNAVOX COMBO TV, h&w, AM/FM radio, stereo, phonograph, \$125. Coon, 3408 Stardust Dr. NE, 298-0845.
GUITAR, 3/4, Sears, \$18; girl's 22" Schwinn bicycle, \$22. 3421 Dakota N.E. Mikkelsen, 268-1485.

CARS & TRUCKS

'58 FORD F-100 1/2-ton pickup, 4-spd., heater, heavy duty springs, overhauled engine, 7.00x15 6-ply tires. Hiling, 1-857-2837.
'58 CHEV., 4-dr., green & white, R&H, AT, 5 good tires, 7.75x15, spare never used, new 12-volt battery w/ guarantee; motor needs some work. Vivian, 318 Cedar SE.
'60 FORD Falcon 2-dr. sedan, 6-cyl., AT, new tires & battery, \$300. Archuleta, 255-6781.
'60 CORVETTE, 327, 4-spd., \$700. Holland, 255-3526.
'58 INTERNAT. pickup, 4wd, 3/4-ton, self-actuating doors (they fly open), \$475. Shummy, 265-1620.
WRECKED English Morris Minor 1000 car, tires & parts, make offer. Hendren, 242-1181.
'68 BISCAYNE 2-dr., std. w/OD, factory air, PS, PB, low mileage, \$1400, \$200 below book. Browne, 344-9873.
FOUR WHEEL DRIVE Internat. Travelall, R&H, locking hubs, \$550. Souder, 282-3121.
'66 MUSTANG GT 4-spd., air, \$1250. Milly, 242-2407.
'67 DODGE pickup, 383 engine, 4-spd., trans., 8' bed, aux. fuel tank, insulated camper shell, \$1350. Appel, 299-3776.
'65 FORD 1/2-ton pickup, V8, AT, LWB, split rim rear wheels, \$700. Shock, 877-3728.

REAL ESTATE

2-ACRE LOT SW Valley, Trujillo Rd. west of Sunset Rd., consider late model pickup w/ or w/o camper in deal. Barreras, 247-8096 after 6:30.
16 DELUXE residential lots, 2.8 to 5.1 acres each, North Hwy 10. Plumlee, 282-3224.
4-BDR., living, dining, den & hobby rms., 2 1/2 baths, 2400-sq. ft., brick, walk to schools, 4-miles from Lab., view, landscaped, dog run. Church, 299-7038.
5.1 ACRES in Rancho de Placitas, will trade for Corrales property. Rudolph, 298-0941 after 6.
3 BDR. NE heights, 1 1/2 baths, den, fireplace, double garage, pitched roof, equity and 5 1/4% loan or refinance, \$23,300. Walker, 299-9425.

WANTED

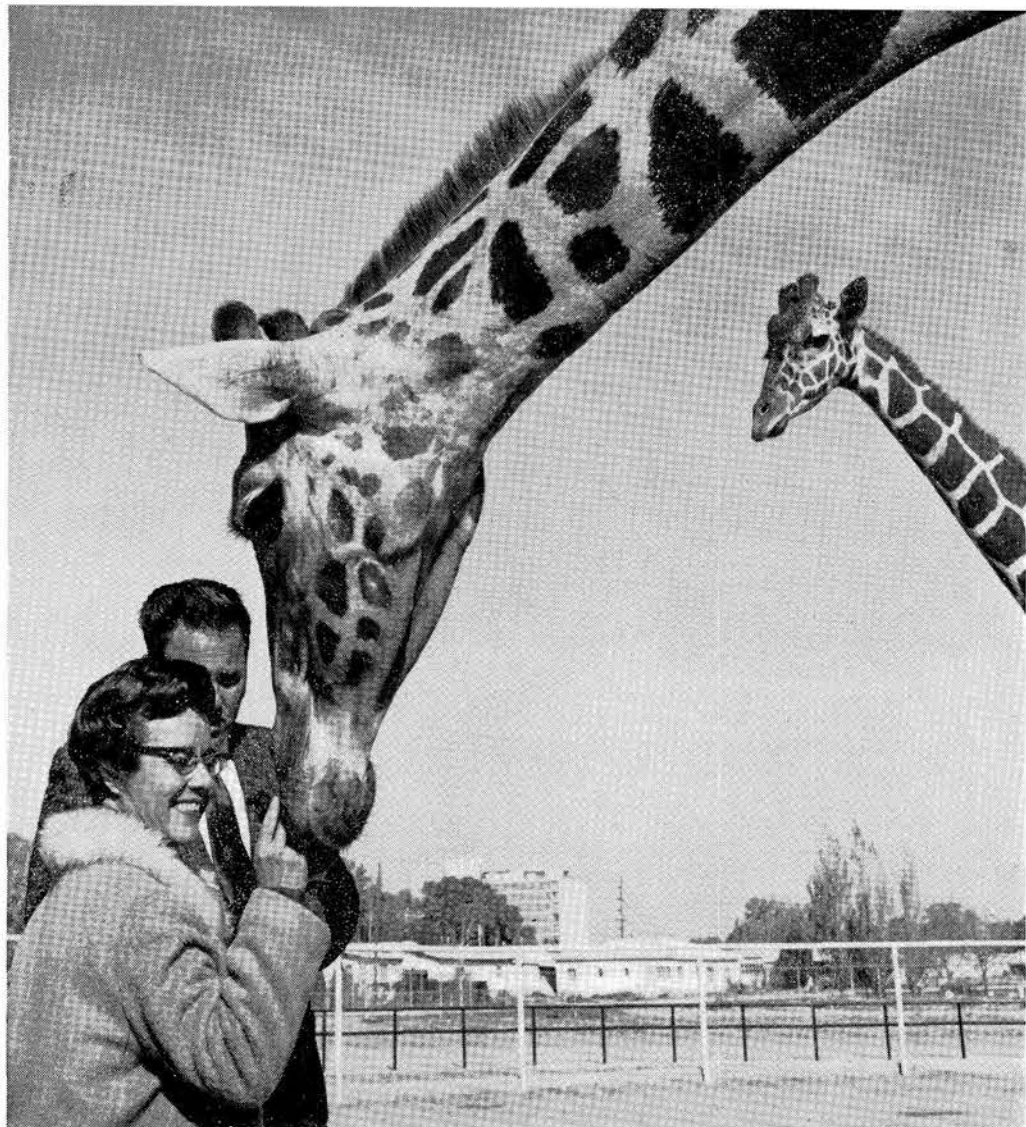
SHARE RIDE from vicinity of San Pedro & Hammett NE to any nate. Devor, 255-4890.
LEATHER PONY SADDLE. Baxter, 344-7601.
PAY CASH for American, European or Japanese daggers, swords or knives; have Colt auto. to trade. Smitha, 299-1096.
HIDE-A-BED in good condition; dining table & chairs. Jellison, 296-9155.
CHARLES ATLAS exercise course, would like to borrow lesson three for a few days. Stark, 299-5953.
BASKETBALL POLE w/backboard, in good condition. Garcia, 256-7606.
CHILD CARE in my home, near Sandia Base, experienced. Davis, 299-8128.
8-HOLE FORD pickup wheels, 16" split rims. Souder, 282-3121.
BIKE, 10-speed. Gallagher, 268-1988.

FOR RENT

FURNISHED APARTMENT, restored adobe barn, N Valley, 1 person, available Dec. 1, \$115 plus utilities. Butler, 898-2025.
HOUSE FOR LEASE: 2-bdr., attached garage, carpeted, AC, fp, stove, refrig., city bill paid, \$110/mo., 2731 Santa Cruz SE. Waddoups, 266-1941.

LOST AND FOUND

LOST—Sunglasses, tortoise shell frames; black record book; small silver tie clasp w/chain and hatchet; poncho in plastic carrying case (left on bus); check book. LOST AND FOUND, tel. 264-2757, Bldg 832.
FOUND—Rx safety glasses; guitar pick, large gold button. LOST AND FOUND, tel. 264-2757, Bldg 832.



MINA CARNICOM (9328) pets a friendly giraffe as zoo director Bruce Stringer watches. Mina is the newly-elected treasurer of the New Mexico Zoological Society. This one gave Mina a big kiss right after the photo was taken.

Zoological Society Treasurer

Mina Carnicom Pets Tigers

Ever been kissed by a giraffe?

Although smooching cum giraffe is not part of her normal activities as treasurer of the New Mexico Zoological Society, Mina Carnicom (9328) was recently tagged by one as she toured the Rio Grande Zoo with director Bruce Stringer. She also petted a tiger and heard the huge cat's cough-like purring.

Mina has been a member of the Society

Sandia Graduate Wives Club Expands Community Service

The Sandia Graduate Wives Club is currently conducting a number of community service projects — a new step for a former social club. The group is an outgrowth of the Technical Development Program Wives Club. When the Sandia TDP program ended, the group changed its name and now has changed its purpose.

One of the service projects is conducting arts and crafts classes at the Job Corps Center for Women. Several others are in the planning stages.

Mrs. Dennis Miyoshi is the service group chairman.

for about a year and was just recently elected its treasurer. Her interest in the group stems from a love of animals and a concern for Albuquerque's zoo.

"We have a tremendous zoo," Mina says. "Compared to several years ago, great improvements have been made in exhibits and facilities. If you haven't been there for a couple of years, take the kids and go. It's a fun outing."

The Zoological Society exists for the sole purpose of helping the zoos of New Mexico — this means specifically the Rio Grande Zoo in Albuquerque since it is considered a regional zoo.

"Our surveys show that the city zoo is a real tourist attraction — the parking lots are full of out-of-state cars during the summer," Mina says. "This is a fact now, but we are also concerned about the future. We feel that with proper promotion the Albuquerque zoo could be nationally known. We have the potential."

Mina also points to the educational activities of the zoo — groups of local school children visit the zoo daily.

"The sight of a strange animal — such as the Siberian saiga — expands your view of the world," Mina says. "There is an awareness of different environments immediately. Children find it exciting."

Primary purpose of the Society is money-raising, from membership dues and by requests for contributions. The money is used for acquisition of animals and improvement of facilities. This augments city funds, which are used for administration and maintenance, and occasional bond issues, which are used to build new facilities. A bear cave-habitat is the next major improvement planned.

"Membership in the Society entitles you to help with the planning and operation of the zoo," Mina says. "Most of us feel very good about our recent successful efforts to acquire a pair of rare sable antelope from Africa."

One of the obligations of a zoo is to help protect rare species. Every animal which becomes extinct is lost forever. Some threatened species, such as the gemsbok, are being nurtured in the Rio Grande Zoo and then released in New Mexico wilderness areas as part of a cooperative program with the State Game and Fish Department.

Dues for membership in the Society start at \$5, Mina says. She has plenty of membership cards for anyone interested. The dues are tax-deductible.

Other officers recently elected by the Society include Mrs. Jack Suttman (Jack is in 3417), vice president, and Mrs. Lewis Wilson (he's in 7616), secretary. Members of the board of directors include John Hornbeck (1) and Robert Armstrong (5221).

Coronado Club Activities

Movie Manana, Soul Session Nov. 28

Tonight (TGIF!) the Coronado Club's giant chuckwagon roast beef (FAMOUS!) is the buffet feature at Happy Hour while Bob Banks, the Yamaha electronic terror (WILD!) holds the bandstand. The troops rush in (CHARGE!) right after work and enjoy special prices (CHEAP!) until 9 p.m. Then (WHAM!) Yolanda Adent takes over the main lounge and (POW!) the sing-along lasts until midnight.

Tomorrow W. C. Fields (who is alive and drunk in Jemez Springs) will star in "The Bank Dick." The Comedy Classic film will be shown at 7:30 p.m. along with two chapters of Flash Gordon (who is outasight on Mars) movie serial. Happy Hour will start at 7 p.m. The movie is free to members and families.

For Happy Hour Friday, Nov. 27, Smilin' Jim Noonan, Club manager (why is he smiling?), will put together a special buffet for day-after-Thanksgiving dining. Veal cutlets (who needs turkey?), mushroom sauce, home fried potatoes, green peas and assorted salads will go for regular \$1.25-for-adults and \$1-for-kids prices. Phil Graham will play for dancing.

Soul Session (a now-it's-happening thing) will come on strong Saturday, Nov. 28, from 8:30 to 12:30. Rod King and the Soul Knights will tear up the bandstand with rock, modern and big. The troops will bugaloo, frug, sagebrush shuffle (and other things). Happy Hour prices are in effect all evening.

THE BAHAMAS TOUR GROUP will meet Tuesday, Dec. 1, at 7:30 p.m. at the Club. Final arrangements for the trip will be discussed.

Several spaces are still available for the tour Dec. 9-15 at \$315 each. Anyone who wants to make the trip should call the Club office immediately.

PETE GALLEGOS (2335), Club entertainment director, was sitting at the north end of the Club lounge when somebody bugged him about a Teen Go Go.

"Amigo," Pete says, "we will take care

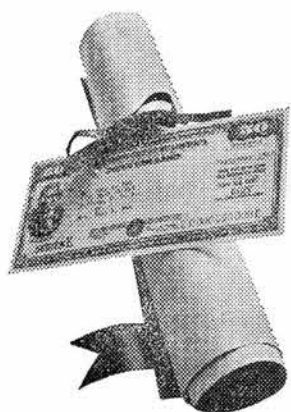
of the youngsters. We had to cancel the teen dance this month but on Dec. 28 we will throw the kids a bash to remember. It will be during the Christmas holidays on a Monday evening so as not to conflict with anything else. We've booked a group called The Star Sapphires that make the big sound kids like. For this party, there will be no limit on guests as long as an adult Club member picks up the tickets for his youngster and friends.

"You ought to come out some time and watch a teen dance here. Join the chaperons, but bring your own ear plugs."

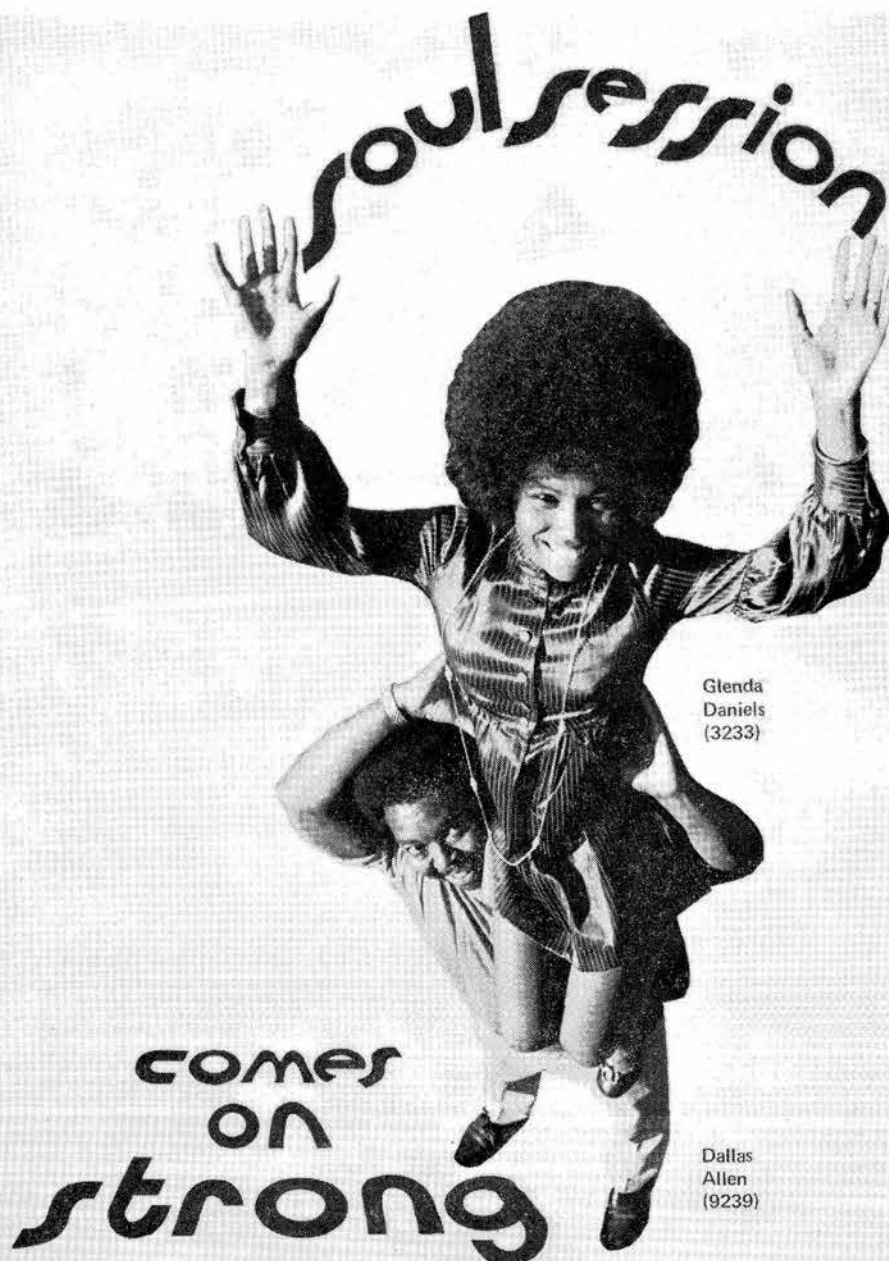


WELL STACKED magazines are adored by Marybelle Manzanera (5337) who urges Sandia subscribers to not-overly-technical mags such as Aviation Week, Scientific American and the like to send copies after reading to Community Relations Division 3433. Publications are then sent to local public schools.

Save them
as if
your son's future
depended
on it.



Take stock in America
Buy U.S. Savings Bonds & Freedom Shares



Glenda Daniels (3233)

Dallas Allen (9239)

NOV. 28-8:30 to 12:30
HAPPY HOUR PRICES