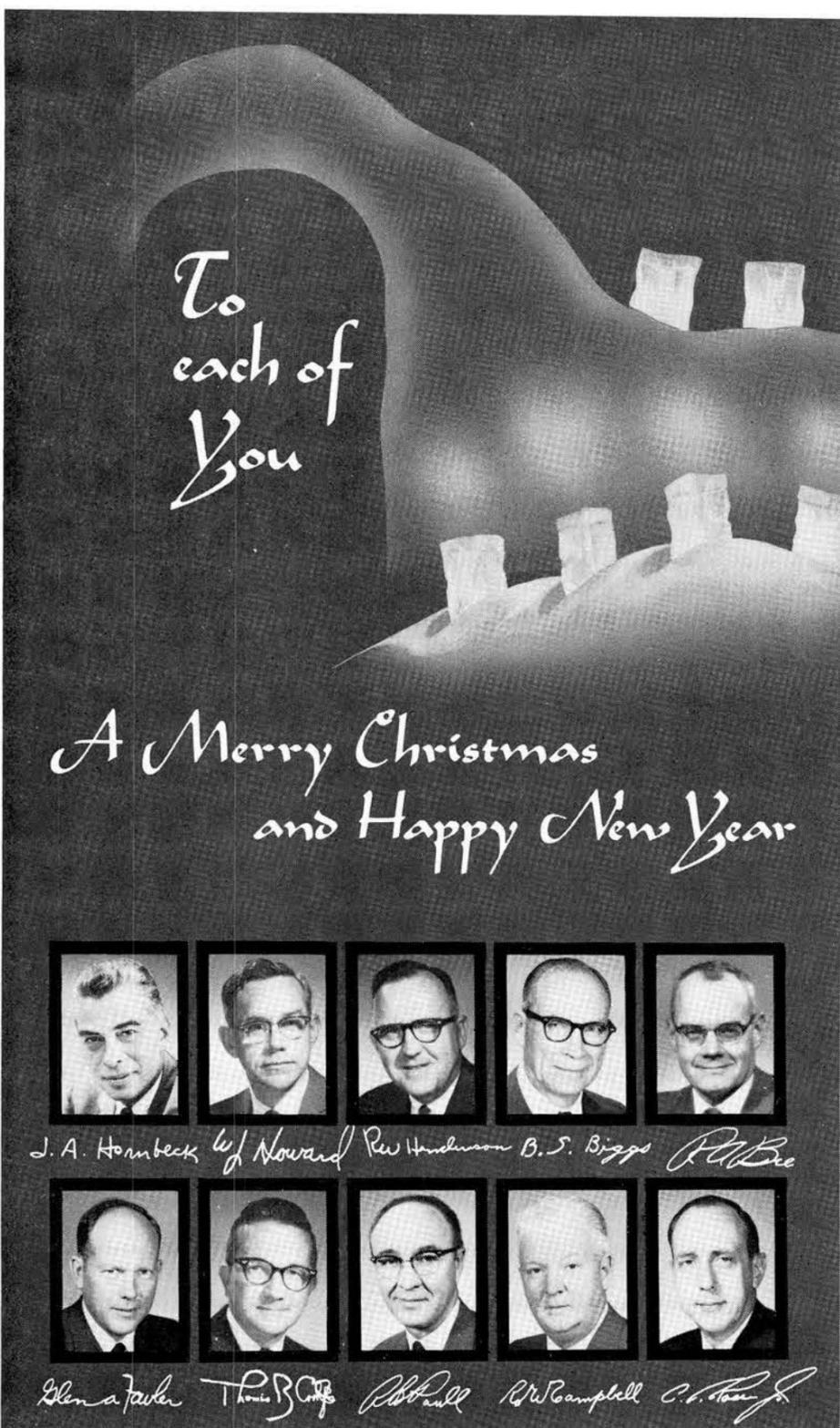


*Peace on earth to men
of good will*



Events Calendar

- Dec. 14-17—Dylan Thomas' "Under Milk Wood," UNM Rodey Theater.
- Dec. 16—Climb to Palomas Peak in the Sandias. N. M. Mountain Club, leader Ellen Hippelli, tel. 255-8295.
- Dec. 24—Night procession Taos Pueblo; ceremonial dances at San Ildefonso, Acoma, Laguna, San Felipe, Santo Domingo and Tesuque Pueblos.
- Dec. 24—Luminaria tour through country club area, Lee Acres and Los Altos area, Albuquerque.
- Dec. 25—Deer or Matachines Dance, Taos Pueblo. Dances for two or three days at other Pueblos.
- Dec. 27-28—Lobo Invitational Basketball Tournament — Gonzaga University, San Jose State, Rhode Island University, University of New Mexico. UNM Arena.
- Thru Jan. 7—Collection of Italian Renaissance drawings, UNM Art Museum, to benefit the Committee to Rescue Italian Art.

Authors

- J. G. Eberhart (1111), "The Critical Surface Tension of Sapphire," Vol. 71, page 4125, 1967, JOURNAL OF PHYSICAL CHEMISTRY.
- Katheryn E. Lawson (1122), "Optical Studies of Electronic Transitions in Hexa- and Tetra-coordinated Manganese Crystals," November issue, JOURNAL OF CHEMICAL PHYSICS.

Happy Children, Grateful Families Recipients of Holiday Charity

Concentrated Christmas charity programs are springing up all over Sandia Laboratory. For a number of years, Sandia employees have chosen this way of spreading holiday cheer rather than exchanging greeting cards with co-workers.

The children of Riverview and Longfellow grade schools will benefit from activities planned by union groups; the Military Liaison Organization again is sponsoring its "Shoes for Kids" drive; Departments 3410 and 3430 have projects underway to assist families in nearby mountain areas; and, as in past years, Organization 1100 will collect money for the All Faiths Home.

The Office and Professional Employees International Union, Local 251, has placed large cardboard boxes in Bldgs. 802, 836 and 892 for collection of gifts for the 330 children at Riverview School. The school submits the name and age of each child, and this information is matched with an appropriate gift. "Actually, we always plan on about 20 or 25 extra gifts," Chairman Betty McKinstry (3462) explains. "Every year some youngsters will bring along a little brother or sister. Because the school principal, Desi Baca, knows the families so well, he can almost always provide Santa Claus with the youngster's name."

The union will sponsor a noon dinner at the school cafeteria on Dec. 20, and on Dec. 23 Santa Claus will be on hand to give out the presents and stockings stuffed with oranges and apples. Ice cream and cake will be served. Many groups will supply entertainment during the party.

Committee chairmen assisting in this annual project include Byron Stewart (4234), Esther Martinez (4613), Wamon Cope (4622), Brenda McAtee (4135), Daryl Orth (4224), Carl Kemp (3465), Bernadeen Cervantes (3413) and Dennis Cordova (4615).

This is the eighth year that the United Unions (International Brotherhood of Electrical Workers — Local 1988, and International Association of Machinists — Local Lodge 1689) have "adopted" the needy youngsters of one of Albuquerque's elementary schools. The recipients for this year's party are 250 students at Longfellow school.

School Principal Rudy Sanchez has submitted the names of the children and their ages to union officials so that the gifts will bear a personal greeting to each youngster. Boxes were placed throughout the Laboratory for collection of the presents.

The first event was a Christmas dinner held at the Eugene Field cafeteria last Wednesday. Tomorrow, Santa Claus will arrive at the Civic Auditorium by train, and at 1 p.m. toys and a sack stuffed with candy, peanuts, oranges and apples will be given to each child. There will be ice cream and cookies for all. Clowns, magicians, bands and mariachis will be on hand to entertain. Coordinators for the project are William H. Edwards (4233) for the electric-

al workers and Kenneth Campbell (4213) for the machinists.

Union representatives for both the Riverview and Longfellow school projects stress that any employee is invited to participate.

The oldest organized drive within the Laboratory—Military Liaison Organization's "Shoes for Kids" drive—continues to roll along. The organization is slightly smaller this year and shoe prices have gone up, but employees still expect to purchase about 70 pair of shoes for needy children at both Riverview and Longfellow schools. The school principals will select the recipients as they are well acquainted with the individual problems. The drive is conducted on a cash donation basis. The store from which the purchases are made will donate a pair of socks and a candy favor for each child when the shoes are fitted Dec. 19. Chairman for the drive is Gene Church (1613), assisted by Don Hosterman (1623) and Charles Cundiff (1632).

Departments 3410 and 3430 have collected more than \$200 from the sale of used books and "white elephants" to aid families living in the communities of Punta, Manzano, Torreon and Tajuque. Food, clothing, toys, hardware, kitchenware, shoes, etc. will be delivered on Dec. 23. Chairmen for this drive include Lucille Smith, Virginia Southerland and John Shunny (all 3414), Mario Sanguinetti (3412), Abbie Williams (3413), Frank Halasz (3414), Nick Tarnawsky (3415) and Jerry Wallace (3431).



DOUBLE DECK puppet stage and original puppets, script and music are part of show created by Ron Day and his wife Mary Kay for presentation during the holiday season to children at the Albuquerque libraries.

Puppets Convert Outer Space Scrooge

Ron Day (3132) and his wife Mary Kay are entertaining children at the public libraries with an original puppet play during the holiday season. They presented the show three times at the San Pedro Branch library last weekend, and several more performances are scheduled at other branches.

"The play is about a Scrooge from outer space," Ron says. "He's grumpy and mean, but the Christmas spirit converts him."

Not only do Ron and Mary Kay pull the strings for the puppets, they also made one of the puppet characters, built the marionette and hand puppet stage, and provide the words and music background. Roger Eaton (9326) assisted in the project and plays guitar on the background tape.

The play has been well received. KNME-TV has requested a performance for television.

Ron says the activity started last Christmas when the couple made a puppet stage for their children. One thing led to another, and the Days prepared a Halloween puppet show for a church program.

Closely related to the puppet show (some of the music is the same) is their work with a singing instrumental group, "The Hilarys." Mr. Eaton is also a member. This group presents original material at banquets and other social occasions.



TWO WESTERN ELECTRIC officials visited Sandia recently to discuss personnel programs, including benefit plans and equal employment opportunity. Pictured during a briefing on Sandia's affirmative action program regarding EEO are (l to r) R. B. Powell, vice president 3000; J. L. Thiesmeyer, WE director of organization planning; R. M. Herrick, WE personnel director; and K. A. Smith, director of personnel 3100.

SANDIA LAB NEWS



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LIVERMORE, CALIFORNIA

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PARTICIPATING in the "Forty-One for Freedom" award ceremony held at Livermore Laboratory Nov. 20 were (from left) L. E. Davies (8150), Commander Dan Piraino of the U. S. Navy's Special Projects Office in Washington, D. C., B. S. Biggs (8000), and Captain J. L. McDonnell, USN, of the Livermore Division of Field Command, Defense Atomic Support Agency. The award was presented by the Navy in recognition of SCLL's contribution to the Polaris system.

'Forty-One For Freedom' Award

SCLL Recognized by Navy For Polaris Achievement

A U. S. Navy distinguished service award, designated the "Forty-One for Freedom" award, was presented to Sandia Corporation Livermore Laboratory in ceremonies held at Livermore on Nov. 20.

The award was made in recognition of SCLL's contribution to the Navy's Fleet Ballistic Missile (FBM) weapon system, better known by the name of its missile, Polaris. The USS Will Rogers, the 41st and final ship of the Polaris missile-launching submarine force, was commissioned in April.

Commander Dan Piraino of the Navy's Special Projects Office in Washington, D.C., presented the award on behalf of Rear Admiral Levering Smith, director of Special Projects Office. Receiving the award for Sandia was B. S. Biggs, vice president at Livermore Laboratory. L. E. Davies (8150), the first division supervisor on the project at SCLL, served as host for the ceremony.

Many Livermore Laboratory employees who worked on the Polaris program also attended the ceremony in the patio area of Bldg. 912.

Others attending included Captain J. L. McDonnell, USN; Lt. Colonel R. R. Sandoval, USA; and Lt. Commander W. B. Shirley, USN; all of the Livermore Divi-

sion of Field Command, Defense Atomic Support Agency.

The commendation reads: "Forty-One for Freedom Award presented to Sandia Corporation Livermore Laboratory for distinguished service in the development and deployment of the Fleet Ballistic Missile Weapon System, 1967."

It is signed by Paul H. Nitze, Secretary of the Navy, and the three Navy admirals who have directed the Special Projects Office since 1955—Vice Admirals William F. Raborn and Ignatius J. Galantin and the present director, Rear Admiral Smith.

Sandia has had responsibilities for the design and development of the non-nuclear portions of the war heads used in Polaris since 1956. The Polaris system has been operational since Nov. 15, 1960. On that date the first of the 41 ships authorized for the FBM submarine force, USS George Washington, deployed on patrol with a full load of 16 tactical missiles.

Two versions of the Polaris missile, A-2 and A-3, are now operational. Poseidon (C-3), a new missile for later deployment in FBM submarines, is now under development.

A similar award ceremony honoring the Lawrence Radiation Laboratory was held the same day.

K. A. Brueckner to Address Colloquium At SCLL on Dec. 19

Dr. Keith A. Brueckner, director of Institutes for Physical Problems and Professor of Physics at the University of California, San Diego, will speak on "Evolution of Nuclear Theory" at the Livermore Laboratory Colloquium on Dec. 19.

Dr. Brueckner is a consultant to the AEC, the Scientific Advisory Board of the U. S. Air Force, and the Ballistic Missile Defense Advisory Committee of the Advanced Research Projects Agency. He is a Fellow of the American Physical Society, editor of *ADVANCES IN THEORETICAL PHYSICS*, and co-editor of *PURE AND APPLIED PHYSICS*.

While on leave from the University of California, he served as vice president and director of research for the Institute of Defense Analyses in Washington, D.C., from 1961-63. In 1963 he was awarded the Dannie Heineman prize for mathematical physics.

Dr. Brueckner holds BA and MA degrees from the University of Minnesota and a PhD in physics from the University of California, Berkeley.

Further information concerning the colloquium is posted on SCLL bulletin boards. Tickets are required for admission. A. N. Blackwell (8110) is serving as host.

Final Figures Are Announced For United Bay Area Crusade

The campaign chairman of the United Bay Area Crusade announced at a recent awards luncheon in San Francisco that contributions for 1967 totaled \$14,618,247. The figure represents a 4.3 percent increase (or \$603,477) over 1966 contributions.

Employees at Livermore Laboratory gave \$24,053 (23 percent over the 1966 amount of \$19,541).

The funds collected help support 176 community health, welfare and youth services located in the five-county region of the Bay Area.

SCLL Christmas Dance Tonight!

Take Note

Beryl Hefley, supervisor of Library Division 8232, was guest lecturer at a Library Technology class at Chabot College in Hayward recently. He spoke on "Special Libraries: Problems, Skills, and Environment."

Beryl is a member of the Library Technician Advisory Committee at the college.



LIVERMORE LABORATORY CHRISTMAS PROJECT—LeOrla Matlow (8150), Claire Grubbs (8141), and Lillian Sprague (8252), left to right, take time out to admire a clown doll as they assemble and pack articles destined for needy Korean children. New and used warm clothes donated by various SCLL employees are being sent to Claire's son David who is with the U. S. Army in Korea. He and other military men are working with the chaplain and missionary workers to distribute the donations at Christmastime.

Congratulations

Mr. and Mrs. Dave Bray (8113), a daughter, Saville Diane Selander, Nov. 22.

Mr. and Mrs. Jack Casey (8113), a son, Jack Allen III, Nov. 30.

Mr. and Mrs. John Chan (8141), a son, Dao-Ming, Nov. 15.

Mr. and Mrs. Kent Hansen (8113), a daughter, Angela Marie, Nov. 30.

Mr. and Mrs. Gene Moore (8131), a daughter, Marion Elisabeth, Nov. 22.

Sympathy

To Chuck Frost (8142) for the death of his mother in Detroit, Mich., Nov. 16.

To Price Hennan (8243) for the death of his mother in Albuquerque, Nov. 21.

To Jim Hopwood (8112) for the death of his mother in Pennsylvania, Nov. 15.

To John E. Miller (8243) for the death of his wife in Chico, Calif., Nov. 23.

To Esther Rickert (8245) for the death of her father in Ewing, Nebr., Nov. 10.

Suggestions Invited for Chabot/Livermore Courses

Questionnaires to be used in evaluating and planning Chabot College's educational programs in the Livermore area are being circulated among the students currently enrolled. Individuals not presently enrolled in Chabot's classes are invited to offer their suggestions on courses and programs they would like to see available at Livermore.

Suggestions may be submitted by writing to Dr. Shanon L. Christensen, Coordinator of Evening and Extension Operations, Chabot College, 25555 Hesperian Blvd., Hayward (Zip Code 94545), or by calling 447-3176 after 4 p.m. on Monday, Tuesday, or Wednesday.



CHRISTMAS DECORATING—Al Harrison (left) and Clarence Rogers (both 8222) string lights on three large spruce trees at Livermore Laboratory. In addition to lights, the exterior of some Laboratory buildings will be outlined with traditional luminarias. Plant Maintenance Division 8222 is responsible for installing the decorations.



FORMER COMPUTER ROOM reflects memories for (l to r) G. D. Horne, Jr. (9414), L. E. Mahuron (9410) and R. Lynes (9413), who points to general area where Sandia's first data processor was installed almost 10 years ago. More recently, Sandia's two IBM 7090 computers were located in the room before they were moved to the new computer facility.



PORTION OF UNIVAC 1108-II multi-processing computer equipment in the new addition to Bldg. 880 surrounds R. M. Campbell (9411-4). Additional UNIVAC equipment is hidden from view in the background.

Installation of UNIVAC 1108 Central Computers About Complete

Most of the hardware for Sandia's new UNIVAC 1108-II multi-processing computer system has been delivered and installed in the recently completed addition to Bldg. 880.

One UNIVAC 1108-II central processor and eight remote consoles in the new facility are expected to be put into operation in January as the first phase in what will be a dual central processing system. The remainder of the 40 remote time-sharing consoles, 10 remote time-sharing display devices similar to television screens and two remote UNIVAC 1004-III satellite computers (to be installed in Bldgs. 806 and 836) will be phased into the system during the next few weeks.

The full multi-processing system, with the two central computers serving as dual processors, is expected to be operational about mid-summer.

Primary purpose of the small 1004 satellite computers is to perform peripheral processing for the large central computers, such as card-to-tape transfer of the input programs and the printing and card punching of the output.

Through the time-sharing feature, each of the users of the 40 remote consoles in various buildings throughout Technical Area I will be provided on-line access to computing service. The central processors' speed is so much faster than the response

of an individual console that each user will be unaware of a delay.

The small display devices will be used to monitor problems during computation and to rapidly display computer information when there is no need for printed copy.

Latest improvements and techniques in the computer field, such as faster speeds, larger mass storage, multi-programming, multi-processing and time sharing, are incorporated in the new system.

The new UNIVAC system is quite a contrast to Sandia's first data processor, which was installed 10 years ago next July. The first computer had a 240,000 bit core memory; whereas the UNIVAC has a core-mem-

ory capacity of over seven million bits. The new system is also about 150 times faster than the original processor. Where it had been taking 123 micro-seconds (millionths of a second) for the addition of nine digits, the 1108 will be capable of adding the same number of digits in three-quarters of a microsecond.

The original data processor was replaced with an IBM 7090 in 1961 and a second 7090 was installed at the Laboratory in the spring of 1964. Both of these computers have been moved to the new computer facility in Bldg. 880 addition where they are operating alongside the UNIVAC central processors.

Greater Capabilities Than Earlier Version

Improved ACCEL System Developed

An improved version of the Automated Circuit Card Etching Layout (ACCEL) system has been developed by Sandia Laboratory and the Thomas Bede Foundation and has been made available to the public. It is more efficient and has greater capabilities than the original system introduced in August 1965.

ACCEL is a set of computer programs designed to aid in producing electronic printed circuit boards. These boards are lightweight and nonconductive and contain thin strips of copper formed by a photo-etching process to provide conductive paths between electronic and electromechanical components. Use of the computer eliminates human error and is much faster than the manual layout method.

ACCEL system combines a scheme for component placement with a scheme for conductor-path routing to produce automatically a printed-circuit board layout. It was developed to help printed-circuit designers determine the characteristics required for circuit board fabrication.

With the ACCEL system, the circuit designed furnishes a schematic drawing of the circuit and information about the parts used in the circuit. This information is then transcribed onto punched cards for the computer.

The computer then produces several graphical plots, including a schematic drawing, a parts list and an assembly drawing showing the location of parts on the printed-circuit board, a hole-drilling coordinate list, and masks to be used in etching the circuit board layers.

Thus, the ACCEL system performs four major tasks. First it edits the engineers data, resolves the schematic into a node-component list (node is the junction of two or more paths), looks up physical and electrical data for the parts used in the circuit and notes any errors in the data. Next it locates the components on the board by an iterative process. Third the program lays out the interconnection pattern between the components. Finally ACCEL generates the output plots.

Improvements in the new ACCEL system over the original version include the capability of handling components with many lead connections, as compared with the original system which was limited to components having no more than four leads. In addition, the first system was confined to single-layer circuit boards; whereas the

new version can be used for designing multi-layered or laminated boards. The new system also includes a catalog of electronic parts that the computer can call on for physical and electrical characteristics. The initial program did not have this feature. The new system also operates two to four times faster than the original and processes many circuits that could not be processed on the initial version.

Current plot routines were written for the SC-4020 cathode-ray tube plotter at Sandia. With this system, Sandia engineers can design up to 47 circuit boards in each computer run.

The system can accommodate a board with an area of 90 square inches, with the standard 0.025-inch grid. Other size grids can be specified and the allowable area changes proportionally. Although conductors can be placed on either one or both sides of the board and laminated if required, components can be placed on only one surface. The system can accommodate

up to 500 components and 300 nodes per board.

The ACCEL technique was conceived by Dr. Iben Browning, a former Sandian and now a consultant to Sandia on the ACCEL system. Dr. Browning is presently director of the Thomas Bede Foundation, Los Altos, Calif.

Sandians who contributed to the development and implementation of the ACCEL system were C. J. Fisk, D. L. Caskey, L. E. West (all 9424) and D. D. Isett, a former Sandian.

The new ACCEL system is being distributed to interested Government Agencies through the Sandia Office of Industrial Cooperation, which is in Technical Information Division III 3413. A user's manual and a magnetic tape containing the program are available. This material will also be available to the general public from Computer Software Management and Information Center at the University of Georgia Computer Center.

Take Note

John L. Wheeler (3251) is the author of an article on "Organizing the Plant Visit for a Crowded Christmas" in the October-November issue of the COLLEGE PLACEMENT JOURNAL. The article describes Sandia's personnel recruiting plan of inviting employment candidates to the Laboratory for a two-day period during the Christmas season last year. Forty-five applicants participated in the special program which included a talk by A. Y. Pope (9300), interviews by various organizations, tours of some laboratory facilities and a tour of Albuquerque.

John, who coordinates 40 line recruiters' visits to 60 college campuses for Sandia, is a member of the Research Committee of the Southwest Placement Association and a member of the Midwest Placement Association.

* * *

Sandia Comptroller R. G. Luckey will deliver an address tomorrow in Denver at the Bill of Rights Luncheon of the Colorado State Society of Sons of the American Revolution. He is vice president general of the Rocky Mountain district of the organization and will attend a board of managers meeting prior to the luncheon.

* * *

The combined Sandia Base Protestant and Catholic Choirs will present the John Peterson cantata "Night of Miracles" on Dec. 17, 5 p.m., at Chapel No. 2, east of the Base Hospital. The public is invited.

Mrs. William M. Simpson (her husband works in 2552) will direct the combined choir. For the past 20 years she has been organist and director for the Protestant choir which recently received top honors in a nationwide Air Force competition.

Soloists for the Dec. 17 concert will include Harvey Brewster (3244) and Mrs. A. A. Walker (her husband is with AEC/SAO). Other Sandians in the 40-member choir include O. L. Wright (4610) and his wife, and Marie Ream (3100). R. T. Williams (4573) will be the narrator.

* * *

Have you any unwanted small articles such as costume jewelry and toiletries at home? They are needed for free distribution to the mentally ill through the Mental Health Association of Albuquerque. Used clothing of all kinds is also needed. For further information call Margaret Wilson (1120) at tel. 268-6269 evenings.



COMPUTER PRINTOUT is studied by (l to r) C. J. Fisk, L. E. West and D. L. Caskey (all 9424) who helped develop the new Automated Circuit Card Etching Layout (ACCEL) system.

Computer Programming Problems Plus Private Flying Keep Gal in Spin

The stereotype of a female mathematician is probably a plain woman with her hair in a bun who sits around working out logarithms and number puzzles for kicks. Dorothy Mannahan doesn't fit the description; in fact, she's a real swinger.

Young and attractive, her appearance alone belies her profession and her particular responsibility in Systems Evaluation Department 9210. Dorothy is quantifying human factors data obtained during recent tests.

Dorothy started at Sandia by writing computer programs and assisting in analysis of data. This past summer she assisted Sandia's human factors specialists (Division 2152) by writing a computer program that would summarize data they acquired in interviews and tests.

She is an example of a person who decided upon a profession at an early age—sixth grade in her case. "By the time I was in college, I liked mathematics even better: no themes, no research projects," she says. Dorothy received her BA in math from Texas Christian University and her MS from Oklahoma State University.

"A friend of mine worked at Sandia one summer and was instrumental in my deciding to come here after graduation," she adds.

Three evenings a week Dorothy teaches a course in mathematics ("Introduction to Mathematics for the Sciences") at the University of New Mexico. Last spring one of her students got her interested in

flying. During the summer months Dorothy was out at Coronado Airport at 5:30 or 6 a.m. for lessons and frequently went back there after work to learn the fundamentals. Then came cross-country flights to Farmington-Durango, Grants-Gallup, and Las Vegas-Tucumcari. In August she received her private pilot's license and became a member of Longhorn Flying Club. She has since flown to El Paso and Lubbock, Texas, and has started working on her instrument rating.

In what leisure time there is left, Dorothy likes to ski and hike, and also puts in an occasional practice session on the harp (she sometimes plays with one of the university's orchestral groups).

Now about those logarithms . . .

Tom Towne Takes Sandia Laboratory Horseshoe Crown

Tom Towne (5133) is the Sandia Laboratory horseshoe champion. He took the Class A crown and was undefeated in 11 matches, tossing 61.1 percent ringers in the tournament. Runnerup is John Hiller (1613).

Class B champion is Joe Brooks (7332), undefeated in nine matches. Oren Worden (1613) is runnerup.

Class C champ is Robert Evans (2133), undefeated in five. E. E. (Tex) Ritterbush (2521) is runnerup.

In the doubles competition, John Hiller teamed with Don Hurt (1613) to take the crown. Tom Towne and Les Cole (4231) are runnersup.

In Class B, Joe Brooks (7332) and Nick Kasnic (4224) are champs. Louis Flores (7332) and Burton Van Sickle (4213) are runnersup.

Class C doubles champs are Robert Evans and Gary Carlson (1134). Frank Speakman (2554) and Tex Ritterbush are runnersup.

L. H. Bressan (2412) was tournament director. About 45 Sandians participated in the final matches.

Welcome . . . Newcomers

Nov. 11 - Dec. 8

Albuquerque	
*Maxine Lucas	3126
Elaine F. Howard	4315
Francis L. Meador	4254
JoAnn Oswalt	3126
Blanche Ottinger	3126
James M. Simons	4631
* Denotes rehired	



COMPUTER PROGRAM to study human factors affecting performance are a responsibility of mathematician Dorothy Mannahan (9212).



SANDIA MEMBERS of the Vice President's Task Force on Youth Motivation are, from left, Bill Ormond (3112), Harvey Brewster (3244), Art Hardeman (9426), Kathy Lawson (1121), and George Williams (9413). Members visit predominantly minority group colleges to discuss opportunities available in industry for those who train themselves to meet the qualifications.

Sandians Serving with Vice President's National Task Force on Youth Motivation

Five Sandians are participating in one of the most challenging and satisfying efforts of the Equal Employment Opportunity program. Designated the Vice President's Task Force on Youth Motivation, the program calls for representatives from industry to visit predominately minority-group high schools and colleges to counsel with students. Since these representatives are themselves members of minority groups, they serve as witnesses to the fact that opportunity is available to those who prepare for it.

They inform the students about opportunities in industry and how best to prepare for and seek these opportunities.

George Williams, a programmer in Data Center Division 9413, recently visited Grambling College in Louisiana. Art Hardeman, a programmer in Administrative Systems Division II 9426, last week visited Morris College in South Carolina. Last year, Kathy Lawson, a physical chemist in Electro-Optical Analysis Division 1122, visited Tuskegee Institute in Alabama.

Harvey Brewster, an administrative staff member in Security Information and Education Division 3244, and Bill Ormond, an administrative staff member in Position Evaluation and Classification Division 3112, are both waiting for their assignments

from the Task Force Headquarters in Washington, D.C.

When visiting the campuses, the Sandians are members of a team from various participating industries. More than 370 firms are cooperating in the program, serving more than 50 academic institutions.

After meeting in Washington to unify their presentations, the team members then visit the assigned campus as a group. The program varies, but usually includes a formal presentation by each team member to an assembly of all the students. Later, meetings are held with smaller groups and individuals.

According to George Williams and Art Hardeman, the individual sessions are most satisfying.

"We can answer specific questions and provide individual counseling," Art says. "We can also tell when we have provided information of some benefit to a student. This makes the effort worthwhile."

George finds that most of the questions pertain to his own educational achievements and how he became a programmer at Sandia.

"I tell them that there is no shortcut to a position in industry," George says. "You have to work to earn the qualifications. With the proper qualifications, there are ample opportunities."



FIESTA TIME—A trio of Sandians make happy music during the noon hours in Bldg. 840. From left are Diego Gonzales, Eufemiano Garza and Pat Garcia.

Trio of Guitar Players Provides Noon Hour Fiesta in Bldg. 840

A fiesta of sorts takes place every noon hour in the south high-bay area of Bldg. 840. The music is provided by a trio of Sandians in Stock and Material Control Division 4212—Diego Gonzales, Eufemiano Garza and Pat Garcia.

The musicians play "rancheros" style, similar to country western with Spanish lyrics. The songs range from sentimental ballads to foot-tapping polkas. The men in the Development Shops who use the area as a lunchroom during the noon hour agree that they have the best entertainment in town.

The men are not professional musicians but their skill makes them welcome at parties, weddings and festive events in Spanish communities throughout the area.

The music is traditional, and the roots of the songs trace back to Spanish colonial times. Pat Garcia remembers learning to play guitar as a child in Tijeras. Everyone sang and played an instrument. Pat plays guitar, violin and accordion and can harmonize with any group. He has committed to memory the lyrics of hundreds of the old songs and learns new ones as they originate in Mexico and the Southwest.

Diego is the quiet one who plays the melody line on guitar. His is a soft approach but the music swings.

Eufemiano says he is still learning to

play guitar. It is a kind of modesty. He makes the rhythm rock solid and anchors the group.

This month marks the start of Las Posadas—the yuletide season—and the musicians will spark a number of festive parties. On Christmas morning, they will wake the residents of Tijeras with "Las Mananitas."

This is a tradition in Spanish villages. Each home is addressed individually, the singers calling out the occupant's name and adding something like "Greetings, man, wake up, wake up, the sun is shining and it's a great beautiful day."

There's a gaiety in the old songs, a warmth and a celebration of life. It's also evident in the more "modern" corridos such as "Cielito Lindo."

The lyrics express the feeling of the group—

"Ay! Ay! Ay! Ay!
Canto no llores,
Porque cantando se allegan,
Cielito lindo;
Los Corazones.

"Ay! Ay! Ay! Ay!
Singing not weeping,
For now, in singing, our hearts,
Cielito lindo,
Are always happy."



SESSION BREAK during the recent symposium on atmospheric turbulence and diffusion in the planetary boundary layer found foreign visitors W. C. Swinbank (left) of Australia, and Frank Pasquill (right) of England discussing the program with co-chairman James D. Shreve, Jr. (5234).

Soft Candle Glow of Luminarias Lights Los Altos Christmas Eve

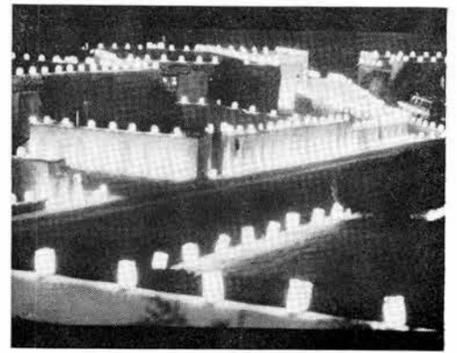
Among the loveliest of traditions observed in New Mexican communities on Christmas eve is the lighting of luminarias to guide the way for the "Lost Christ Child" who walks among the faithful and seeks entrance into their homes.

The use of luminarias probably commemorates the shepherds' fires which glowed from hillsides prior to Christ's birth. Some remote New Mexican villages retain the old custom of lighting small bonfires in front of doorways on Christmas eve; however, the more widespread tradition is that of using luminarias.

For newcomers to New Mexico, luminarias are medium-sized, brown-paper bags containing an inch or two of sand and a candle. The top of the bag is folded over to keep the paper away from the flame. The sand provides weight and extinguishes the candle when the wick burns low.

Probably the most spectacular display in Albuquerque is found at Los Altos, an area just north of the intersection of Coors Blvd. and Bridge St. SW. All 35 home-owners place the luminarias less than a yard apart on as many as four levels of walls and roofs. No light shows except the soft glow from the candles and, approaching from the east on Bridge Street, the effect is like that of a storybook castle.

Sandians J. G. Marsh (3414), C. J. McGarr (4600), Florencio Baca (4574), and



MAGIC of traditional luminarias, placed on homes throughout the Los Altos area, is captured in this photograph by Robert F. Casper (1521).

H. E. Harling (9200) live at Los Altos and are among those who spend hours preparing the luminarias and placing them on their homes—usually 200-250 per house.

The display can be viewed starting at dusk on Christmas eve. Unless the weather conditions are adverse, the candles will burn through the night. Parking is available near the entrance pillars (on Coors Blvd. SW) for those who wish to walk rather than drive through the area.

Artist Gene Lloyd Uses Snowflake Design for Classic Christmas Cover

For the second year in a row, Gene Lloyd of Technical Art Division 3463 is the artist for the LAB NEWS Christmas cover. The illustration was selected by the editorial committee from a number of proposed designs.

Gene adapted a classic snowflake design for the cover as a decoration for the words, "Peace on earth to all men of good will," which express his sentiments this holiday season. Last year, Gene's design was adopted from a 14th-Century illuminated music manuscript.

He has been a technical illustrator at Sandia since September 1955. He holds a Bachelor of Fine Arts degree from the University of New Mexico and is working on an advanced degree. He studied architecture at the University of Denver.

Gene's oil paintings have been exhibited at the UNM gallery, the Museum of New Mexico and at William Rockhill Nelson Gallery in Kansas City. These were primarily non-objective oils.

Gene doesn't have much free time for painting these days. Last summer he bought an old adobe home in Taos and has been spending every weekend since then restoring it.

"The artists at Taos and the scenery of the place provide a great environment in which to paint," Gene says. "I'll be spending weekends there in my new studio. After all these years of putting up and taking down the easel, I'm finally going to have a permanent place in which to work."



GENE LLOYD (3463), Christmas cover artist, inspects one of the color separations used to print the striking snowflake design.

Shock Phenomena in Solids Discussed at APS Meet

A number of Sandians will present technical papers during the American Physical Society meeting in Pasadena, Calif., Dec. 18-20.

G. E. Seay (5130) will be chairman of the session on shock phenomena in solids.

Members of Applied Physics Research Department 5130 who will present papers include: R. W. Rohde, "Dynamic Yield Behavior of Shock-Loaded Iron from 77 to 573°K"; O. E. Jones and R. W. Rohde, "Mechanical and Piezoelectric Properties of Shock-Loaded X-Cut Quartz at 573°K"; R. A. Graham and W. J. Halpin, "Dielectric Breakdown and Recovery of X-Cut Quartz under Shock-Wave Compression"; R. R. Boade, "Shock Compression of Foamed Graphite"; O. E. Jones and J. R. Holland (now 9332), "Effects of Grain Size on Dynamic Yielding in Explosively Loaded Mild Steel"; G. E. Seay, R. A. Graham, R. C. Wayne and L. D. Wright (formerly of Sandia), "Shock-Wave Demagnetization of a Manganese Zinc Ferrite."

Other technical presentations are: "Nuclear Magnetic Resonance and Relaxation of ¹⁹⁵Pt in Platinum-Palladium Alloys" by Albert Narath and H. T. Weaver (both 5150) and "Switching Life Performance of Polycrystalline Ferroelectrics" by R. H. Plumlee (5143).

Planetary Boundary-Layer Contamination Discussed

Authorities from several countries participated in discussions during the recent symposium on the theory and measurement of atmospheric turbulence and diffusion in the planetary boundary layer, which was co-sponsored by Sandia Laboratories and White Sands Missile Range Atmospheric Sciences Laboratory.

Banquet speaker at the Albuquerque meeting was E. L. Deacon of the Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia, and visiting professor at Texas A&M University. Other foreign participants were W. C. Swinbank of CSIRO, now visiting professor, U.C.L.A.; Frank Pasquill, Meteorological Office, Berkshire, England; K. D. Hage, University of Alberta, Canada; and G. T. Canady, University of Waterloo, Canada.

J. D. Shreve, Jr., supervisor of Sandia's Aerospace Sciences Division 5234, was co-chairman of the three-day symposium. Sandia technical papers presented included "Turbulence Data for Use in Hazard Analysis" by R. E. Luna (4235); "Accuracy and Representatives of Jimsphere Wind Soundings" by J. W. Reed (7111); and "An Automated Meteorological Measurement System" by H. W. Church (5234), R. E. Luna, J. W. Reed, and H. G. Booth, Air Resources Laboratory, Las Vegas, Nev.

Congratulations

Mr. and Mrs. Kermit Frye (4231) a son, Dec. 7.

Mr. and Mrs. Gersedon Martinez (3432) a daughter, Dec. 8.



CHRISTMAS LIGHTS in the soft glowing luminaria tradition of New Mexico will outline Sandia Laboratory during the holiday season. Men of the electrical and maintenance shops completed installation of the Christmas decorations this week.



F. C. Scott

Doris Kokkes

Deaths

Francis C. Scott, a retired Sandia employee, died Nov. 25 in Albuquerque after a long illness. He was 76.

He retired from Sandia in May 1956 after working at Sandia Laboratory 10 years. He was supervisor of Millwright and Machine Division when he retired.

Survivors include his widow, one daughter and three grandchildren.

* * *

Doris H. Kokkes, a record clerk (data edit) in QA and Reports Division 2112, died Dec. 3 after a long illness. She was 49.

She had worked at Sandia since November 1956.

Survivors include her husband, mother and two brothers.

Sympathy

To Henry A. Hinrichs, Jr. (4514-3) for the death of his father in Albuquerque, Nov. 24.

Christmas Lights Will Be Turned on Tonight At Sandia Laboratory

Men of the maintenance and electrical shops finished installing Christmas decorations at Sandia Laboratory today. Electric luminarias and other festive lights are scheduled to be turned on at five p.m. as employees leave work.

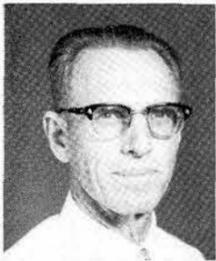
Buildings 800 and 802 will be outlined with soft glowing lights as in past years. This year, the electric luminarias have been extended to cover Gates 1 and 7 and Bldg. 803. In addition, green and white lights are in place in trees in front of Bldg. 800 and in the shrubbery on the mall near the Sandia Laboratory sign.

A large Christmas tree is also installed in front of Bldg. 800. Aluminum trees have been placed in Bldgs. 800, 832, 839 cafeteria, Area III cafeteria and the lobby of the reactor Bldg. 6588.

Giant Christmas cards, painted by Felix Padilla (4516) and Ken Stiver (4513), are in place at gates in Areas I, II and III.

Service Awards

20 Years



H. J. Bowen
7233



J. A. Culver
8222



G. W. Ison
2526



I. W. Lenz
7226



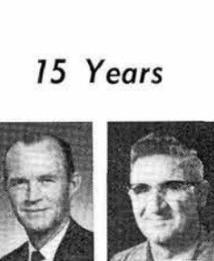
G. C. McDonald
5590



R. L. Rutledge
4613



D. S. Tarbox
3200



J. G. Brooks
7352

John Cotch
4512



B. M. Gragg
9411



R. E. Hollenbach
1411



L. F. Martinez
4622



James McMinn
8241



John Miziker
1511



I. L. Moulton
9213



J. S. Ochoa
4614



H. T. Stump, Jr.
5590



W. E. Tucker
2126



S. H. Wagner
8163



D. G. Westfall
9221



R. W. Willey
5637

15 Years

'Sandia Spinoff' Film Earns Three National Awards in Competitions

"Sandia Spinoff," a 16-minute color film produced by Sandia Laboratory has earned three awards for excellence in recent national competitions. The film reports the Sandia developments in ion plating, laminar-air-flow clean rooms, and ACCEL (computer-designed printed circuits); and shows how these manufacturing techniques, created to support Sandia's weapon programs, can be used throughout industry (a "spinoff" from Sandia's work to the nation's industries).

The film earned a Golden Eagle Award from CINE (Council on International Non-theatrical Events).

"Sandia Spinoff" took second place in the Industrial Category at the International Film and Television Festival in New York. Sandia's film was one of 100 films entered in this category.

In the 1967 Industrial Film Awards competition sponsored by INDUSTRIAL PHOTOGRAPHY magazine, "Sandia Spinoff" received a certificate of honorable mention.

The film was produced for the Public Relations Department 3430. J. E. Mitchell, Division 3431 supervisor, prepared the original script. C. E. Spriggs (3464) wrote the shooting script and directed the film. M. W. Hancock (3464) was the cinematographer.



"SANDIA SPINOFF," a color film produced by Sandia Laboratory, has earned three national awards for excellence. From left are J. E. Mitchell (3431), who wrote the original script; M. W. Hancock (3464), cinematographer; and C. E. Spriggs (3464), writer-director.

MIT's Bruno Rossi at UNM-Sandia Colloquium

The UNM-Sandia Colloquium on Monday, Dec. 18, will feature a talk on "X-Ray Astronomy" by Bruno Rossi of Massachusetts Institute of Technology.

Professor Rossi was a pioneer in the field of cosmic radiation and has made numerous important contributions in the fields of cosmic ray cascade showers, high energy physics (through the study of cosmic ray phenomena) and space physics (through satellite experiments). His most recent work is in x-ray astronomy.

His publications include the book HIGH ENERGY PARTICLES and a text on OPTICS.

The colloquium will be held at 3 p.m. in Rm. 184 of the UNM Physics and Astronomy Bldg., 800 Yale Blvd. NE.

10 Years

Dec. 15-28
S. L. Owens 4231, Elizabeth A. Larrick 3462, G. L. Williams 8117, and Sylvester Deluca 4613.

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 Corporation 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

REAL ESTATE

4-BDR., den, lg. LR, 2-car garage, includes stove, refrig., washer, dryer, custom drapes, make offer on \$3000 equity, will trade for boats, cars, trucks, vacant land. Little, 877-0446.

UNUSUAL HOUSE, exposed beams throughout, flagstone FR, 2 fp's, lg. recreation rm., 3-bdr., 1 1/2 baths, extras, close-in location. Hill, 268-1420.

2-BDR. APT., electric heat, stove, refrigerator, garbage disposal, drapes, nylon carpeting throughout, swimming pool, children & pets accepted. Bowers, 298-1992.

SECLUDED 3-acre residential lot along Rio Grande River, NW, all underground utilities, shade trees along paved road. Stein, 242-2967.

MANKIN, 3-bdr., 1 1/2 bath, carpeting and drapes, landscaped, private backyard, covered patio. Love, 299-0956.

RESIDENTIAL LOT, Falcon Heights. Williams, 255-3652.

CARS & TRUCKS

'63 Chevrolet Super Sport, 327 cu. in. V8, 4-spd., bucket seats, R&H, w/w. Van Hallen, 296-2531 after 5:30.

'55 FORD V8, Houghton, 299-3386.

'57 FORD Fairlane 500, 4-dr., AT, PB, PS, AC, stereorized ignition. VanDelinder, 255-9324.

'67 OLDSMOBILE 442, 400ci, 4-spd. Hurst/Rally pack, tach, buckets, console, 5 wide ovals w/ mannum 500's, low mileage, \$3195. Hutton, 255-7455.

'61 VW, recently overhauled, \$600. Fox, 296-5660.

'64 MONZA Sports Coupe, R&H, auto., new tires, \$800. Ryan, 299-3318.

'66 RAMBLER Rogue, 2-dr. HT, bucket seats, ST w/OD, 6-cyl., w/w, 21,000 miles. McInoye, 268-6532.

'59 CHEV. pickup, 3-spd., 6-cyl., LWB, wide bed, brand new under hood. Jones, 877-1202.

'60 FORD ANGLIA, new equip., tires, generator, brakes, battery, etc. \$200 or best offer, 147D Gen. Arnold NE. Johnson, 299-5105.

'62 VW camper, new engine, platform tent, \$1200 or trade for late model station wagon. Durgin, 298-6433.

'64 GRAND PRIX PONTIAC, bucket seats, AC, PS, PB, Hindi, 299-8996.

'66 MUSTANG GT-350, R&H, 4-spd., American mags, 15,000 miles, white w/blue racing stripe, \$2650. Renninger, 299-3433.

'66 CHEVROLET El Camino, firm \$1850. Kallis, 1304 13th Loop, SB, 264-5410.

'62 VW camper, completely equipped, \$925. O'Neill, 255-6355.

'55 CHEVROLET 4-dr., twin 4-barrels, Corvette cam, 283 engine, twin pipes, stick shift, push-button front seats, \$350 or best offer. Montoya, 298-3830.

'49 JEEP pickup, new paint, upholstery, Warn hubs, new heavy-duty radiator, R&H, engine, \$550. Courtney, 255-4663.

'51 JEEP CJ3A, univ. 4-wd., metal top, tow bar, hubs, \$700. Fifer, 298-9478.

'56 CHEVROLET, 2-dr. HT, standard shift, 283 V8, new tires, chrome wheels. Moore, 256-0529 or 268-1683 after 5.

'58 FORD Tudor, stick shift, R&H, Austin, 255-4507 after 5:30.

'63 CORVAIR MONZA, R&H, bucket seats, 4-dr. w/ chrome rack. Moye, 243-1605.

'54 JEEP station wagon, R&H, OD, new paint, \$350. Haskins, 282-3748.

MISCELLANEOUS

YELLOW gas range, brown hood. Rose, 298-6238.

HEATHKIT AM-FM, stereo tuner, tube type AJ-32, \$45. Sullivan, 268-5130.

POLAROID camera & case, \$25; Christmas decorations, bees wax candles. Kennedy, 298-2226 after 5:30.

'67 YAMAHA 350, 2800 miles, \$650. Shaffer, 242-6507.

BOY'S 26" standard bicycle; 1 pr. electric small animal clippers. Kochmann, 299-5133.

HEATH STEREO equipment: AA-40 amplifier, \$50; SP-Z preamp, \$35; AJ-10 AM/FM tuner & AC-11A multiplex adapter, \$65; or sell all for \$125. Miller, 344-3986.

BARBIE DOLL clothes, 65c to \$2.50. Valdez, 268-8521.

HEILAND strobonar flash unit, 648, has 2000 BCPS output at 1/2000 second, \$20. Henry, 256-2467.

MAGNAVOX TV, 23" fruitwood console, \$65. Bonner, 299-7413.

HOFFMAN 17" TV w/swivel stand & rabbit ears, \$10. McCord, 255-2638 after 6.

HI-FI amplifier, Scott 260 solid state, \$165; Garrard changer AT-6, \$35; Koss earphones PRO-4, \$20. Boyes, 255-7170.

WHITE WALL TIRES, 3 tires, 6 mos. old for \$10 each; one tire 2 mos. old, \$20; sizes 7-7.5-14 Firestone, Nitchee, 299-0602.

'61 HONDA model 110, 50cc. Sport cycle, 1600 miles, has new seat cover, \$95 or offer. Lowe, 11404 Bellamah NE, 299-7725.

BOY'S bicycles, 20" & 24", w/ thornproof tubes, \$18 ea. Johnson, 298-1011.

250-GALLON butane tank. Battaglia, 898-2690.

MAPLE kitchen table w/four chairs; 3 bar stools; manual lawn mower GE rotisserie. Schmitt, 296-3267.

SCOTT 72-watt dual channel stereo amplifier, unused. Jones, 268-5236.

ZENITH 23" B&W TV, thin-line maple cabinet, remote control. Miller, 255-1324.

AQUARIUM OUTFIT: 20 and 5-gal. tanks, numerous items of equipment, cost \$120, sell for \$50. Watkins, 299-0411.

GIRL'S 20" Sear's bicycle, training wheels, thornproof tubes, \$20. Mayden, 256-1696.

6-YR. baby crib, \$15; black & white tweed reversible car coat, size 24 1/2, \$15; Bendix deluxe home ironer, \$35. Carpenter, 298-0755.

8x10 OVAL HOOKED RUG, floral pattern, beige background, \$10. Worden, 268-7069.

BOAT, 12' aluminum Lone Star; trailer, Shoreline; McCullough 7 1/2 hp motor, outboard; gas tank, \$325. Geibel, 299-0275 after 6.

BASENJI PUPS, purebred red & whites, \$50 either sex. Weart, 298-0614.

GARAGE CLEANOUT: includes electric stove, twin-size bed, bottle sterilizer, ice skates, etc. Mills, 256-2845.

MINIATURE male Daschund, housebroken, \$25; Montesa 250cc scrambler, '67 L&Cross engine & near box, many extras, consider trade. Cobb, 268-3151.

TYPEWRITER, Travel, Spanish & English font, \$50; baby bed, \$25; play pen, \$7. Chacon, 299-8421.

SCUBA GEAR: Calypso regulator, Nemrod tank w/ Waterlun pack, total rin, \$75; cordless slicing knife, Sunbeam, \$21. Sutton, 298-0001.

'65 YAMAHA motorcycle, 250cc, low mileage, \$375. Duvill, 299-8744.

BI FOLD metal closet doors for 36" opening, \$7; child's metal desk, \$5. Burner, 299-8626.

'64 HONDA Super Hawk, 305cc, recent overhaul, many new parts. Sens, 265-4041.

AMPEX recorder, stereo play & record; 2 matched walnut speaker enclosures w/Ampep speakers, each: 18"D, 31"W, 25"H, 1 yr. guarantee, \$625 plus \$325 or sell separately. Browning, 299-6384.

CABINET sewing machine, \$16; Drawrite trailer hitch for Chev. SW '61-64, \$7; adjustable bumper hitch, \$3; Renewal visible head, new, \$2. Stuckey, 255-2442.

BOY'S golf set, includes 4 irons & 3 woods, no bag. Nelson, 256-6300.

26" GIRL'S bike, 2 each, thornproof tubes, chrome fenders, your choice \$15, Merritt, 299-6630.

'64 JAWA 350cc, 2070 miles, \$300; '54 Harley Davidson Sprint, 165cc, \$65. Shock, 877-3728.

AKC registered German Shepherd puppies, champion bloodlines. Riley, 636-2154 (Bosque Farms, after 6).

BICYCLES: girl's 26" and boy's 26", extra accessories, \$25 ea. Cullley, 256-6308.

WINCHESTER Canadian Centennial rifle, 30/30, gold engraved, trade for other guns or old knives. Smitha, 299-1096.

AKC reg. toy poodles, 8 wks. old Christmas day, black females, will hold until Dec. 21, \$75. Ambrose, 242-2598 after 5.

FIVE-PIECE drum set, \$90; ice finure skates, girl's size 3, \$5.50. Finch, 1830 Indiana St. NE, 268-8115.

RC2 record player, 4-spd., needs minor repair, orin. cost \$125, sell for \$30; Silex blender, \$7; rustic table, 3'x6', \$10. Brown, 255-0566.

3-SPEED 26" Schwinn bicycle, hand brakes, \$25; '61" multi-laminated Super Competition skis, Cubco bindings, \$15; ski boots, Garmisch Jace, double-boot, size 11, \$8. Reynolds, 299-5157.

VOLKSWAGEN AM RADIO, new, unused, Realistic, pushbutton, all solid state, \$30, sells for \$37.95. Newman, 299-2729 after 5:30.

3/4 SIZE rollaway bed, \$15; Barton, 299-3738.

GIRL'S 26" bicycle, \$20; 4'x7' pool table, \$50; metal lathe, auto. threader, 36" bed, milling attachment, stand, \$600. Pepper, 299-2459.

TWIN poster bed frame, white & gold, \$15; Grolier teaching machine, \$15; 8 ruby color 8 oz. stem goblets, \$4. Selph, 299-6833.

'60 IMPALA HOUSE TRAILER, 2-bdr., 10'x45', Kuroski, 268-5889 between 5 & 6.

8MM movie camera w/3 turret lens & light meter, \$20. Hart, 299-8832.

WONDER MARE rocking horse, \$7; kitchen seat, \$3.50; rear shock absorbers for Chev. pickup, \$3. Bentz, 299-3448.

NEW FINE ARTS crystal set, \$100 complete, orin. cost \$250, Tessler, 302 Morningside SE, 255-1729.

3/8 AD exterior plywood; selling price \$3.89; 4'8 sheet, sale price \$2/sheet, 25 sheets, Stronach, P.O. Box 535, Los Lunas.

BICYCLE, girl's 24" Huff, 2-spd. automatic, thornproof tubes, late model. Wentz, 298-2630.

21" B&W TV, blond console on casters, \$15. Sundberg, 299-2177.

BOY'S 26" 10-spd. bicycle; boy's light weight bicycle. Jennings, 255-5950.

TRAVEL TRAILER, 13' Santa Fe cub. Day, 256-6360.

SHOULDER HARNESS-seat belt combination, new, \$4. Coleman, 299-2377.

UNIFORM, adult scouters; automatic mangle, \$10. Stixrud, 298-0478.

RUGER MARK I automatic pistol, 2 sets of stocks, 2 clips, retail \$62.50, sell for \$40. Smaier, 299-8413.

SNARE DRUM w/new carrying case, stand & practice pad, \$50; 18 cu. ft. GE refrig., \$50. Schultz, 299-2857.

FOR RENT

3-BDR. HOUSE, unfurnished, rear porch & yard & garden lot, \$55 mo. Valdez, 877-6401.

HOFFMAN brick 3-bdr. home, 1 1/2 bath, remodeled kitchen w/dishwasher, AC, drapes, carpet, landscaped. Miser, 255-1661.

WANTED

USED CELLO, must be full size. Van Delinder, 255-9324.

JOIN car pool from vicinity of Morris & Montgomery. Busby, 299-6450.

CARRY-ALL or similar vehicle w/less than 30,000 miles, cash or trade my '61 Falcon wagon, '53 pickup. Tiefa, 299-2763.

USED unicycle for 12-yr-old. Cowham, 298-4249 after 5:30.

.22 CAL. RIFLE, semi-auto., pump or lever action. Abrams, 344-8252.

ELECTRIC IRONER, preferably a portable model. Hill, 243-3493.

CAR POOL members from Bosque Farms to Area I. Mills, 636-2149.

USED set of weights or bar bells. Stromberg, 255-6131.

SMALL 2-wheel trailer to be pulled by VW. Chacon, 299-8421.

RIDE or join car pool in the Inez Addition, my address 2233 Inez. Duvall, 299-8744.

RIDER-woman or couple to help w/driving to Los Angeles vicinity, leave Dec. 22, return Jan. 2. Wright, 298-2940.

RIDER for car pool on or near Eubank. Menaul to Comanche, to 892/807. Guist, 299-9060.

TO RENT on a long term basis, nice unfurnished home w/double garage in nice neighborhood, no children. Shane, 296-4430.

LOST & FOUND

FOUND—Sunglasses, keys, silver w/turquoise earring, multicolored cluster earring. LOST AND FOUND, tel. 264-2757, Bldg. 610.

LOST—Sunglasses in dark green case, safety glasses, round sterling silver tie clasp, stenographer's note book w/class notes, tan and red Thermos, safety glasses w/clip, Rx glasses in maroon case, VW key, small pocketknife w/yellow handle, Ronson butane cigarette lighter, man's white gold wedding ring, airline ticket, black brief case, black wallet. LOST AND FOUND, tel. 264-2757, Bldg. 610.



LUNCHEON SERVICE resumed this week in the redecorated Coronado Club dining area. New kitchen and serving equipment makes luncheon service faster than before while new decor provides pleasant surroundings. The special bus service to the Club has also resumed. Mary Alice Flores (4311) helps Hubert Pée, Coronado Club manager, celebrate completion of the remodeling effort.

Debutante Ball, Teenage Go-Go, New Year's Party on Club Calendar

Eight young ladies will be presented tomorrow night at the annual Sanado Club Debutante Ball. The formal dinner dance gets underway with a social hour from 6 to 7 p.m. The presentation starts at 7 p.m., followed by a steak dinner. Dancing starts at 9 p.m.

The Ball, open to all Club members, costs \$7.50 per couple. Call Marion Nelson, tel. 265-1072 for reservations.

Teenage Go-Go

The youngsters will celebrate the holiday season with a go-go party at the Club Thursday, Dec. 28. Carl Bell of KQEO will be master of ceremonies, and the Circuits will make sparks on the bandstand. Member parents must pick up tickets by 5 p.m., Dec. 28. Admission is 25 cents for members, 50 cents for guests.

New Year's Eve Party

1968 will be rung in at the Coronado Club Saturday, Dec. 30. The party starts with dancing at 9 p.m. Two of the Club's favorite orchestras will make the happy music. Sol Chavez will raise the roof upstairs while

Tommy Kelly blasts forth downstairs. Hats, noisemakers, confetti, champagne, and a hearty breakfast come with the \$7.50 per couple admission charge. Tickets are on sale at the Club office. Reserve your table early.

Social Hours

With holiday parties booked continuously through the holiday season, the TGIF crowd is meeting in the main lounge for Friday evening social hours. The Club is providing free snacks and the usual bargain social hour prices. The fun starts at 5 p.m., lasts until 7. Pat Reich and piano entertain.

Dance Classes

A new series of basic and advanced dance instruction starts at the Coronado Club Jan. 8. The 10-week basic course will meet Mondays from 7 to 8:30 p.m. and includes instruction in both popular and Latin dances. The advanced class will meet Mondays for 10 weeks from 8:30 until 10 p.m. The fee is \$20 per couple. Enroll at the Club office prior to the first meeting.

Festival of Lights

Chanukah Is Holiday for Jewish Faith

The Festival of Lights — a time for rededication of the Jewish spirit — will begin at sundown on Dec. 26 and continue for eight days with special ceremonies of religious significance and gifts for the children.

The Hebrew word for the holiday means "dedication" and is spelled in many ways: Chanukah, Hanukkah, etc. This festive Jewish holiday is based upon an ancient legend. When Judah Maccabee and his followers recaptured Jerusalem in 165 BC, they found the Syrians had desecrated the sacred temple. When this temple was rededicated (on the 25th day in the Jewish month of Kislev), the High Priest could find only enough undefiled oil to maintain the rekindled Eternal Light for a single day.

This caused considerable disappointment because the Eternal Light symbolized the light of the Lord in all His wisdom and to prepare new holy oil required eight days. Nevertheless, the small container of consecrated oil was used, and according to rabbinical tradition, a miracle occurred: the lamp burned for eight days and eight nights on the minimal amount of fuel until the new oil was prepared.

To commemorate the start of the holiday, the first candle on the Chanukah candelabra (or Menorah) is lit with the "servant light" and an additional candle is lit on each successive night until all eight candles are aglow. Placed in a prominent place, the Menorah serves as a reminder of the fight for tolerance and freedom which occurred some 2100 years ago.

In the Synagogue, devotions include a special Chanukah ritual, traditional holiday melodies, and sermons which emphasize the right to worship God as one sees fit.

Among friends, the greeting exchanged is "Happy Chanukah."



LIGHTING THE MENORAH has special significance to persons of Jewish faith during the eight days of the Chanukah festival. Hank Guttman (2152), his wife, and son Jeff watch as daughter Michele carries out the tradition.

Speakers

O. E. Jones (5133), "Dynamic Response of Metals to Shock Loading," University of Texas Engineering Lecture Series, Nov. 15, Austin.

Albert Narath (5150), "Effects of Electron-Electron Interactions on Nuclear Spin Lattice Relaxation Rates in Metals," University of California Physics Department Colloquium, Nov. 15, Berkeley.

Katheryn E. Lawson (1122), "Optical Spectra of High-Spin Manganese (II) Salts," University of New Mexico Chemistry Seminar, Dec. 8, Albuquerque.

D. W. Ballard (2564), "Manufacturing Research at Sandia Laboratory," design and manufacturing engineers of Western Electric's North Carolina Works, Dec. 5, Winston-Salem; "First Hand Impressions of Life Behind the Iron Curtain," Albuquerque T-VI, Nov. 29.

N. S. Hey (3431), "Rolamite," Federal Bar Association, Albuquerque chapter, Dec. 5.

R. S. Claassen (5100), "Ferroelectric Ceramics as Electro-Optic Memory and Display Devices," Stanford University, Nov. 17, Palo Alto, Calif.

C. E. Land (5143), "Electrically Variable Optical Properties of Ferroelectric Ceramics," IEEE Electron Devices Group, Nov. 28, Albuquerque.

E. P. Quigley (2565), "Machine Tool Operations within IMOG Agencies," National Machine Tool Builders Association/Interagency Mechanical Operations Group, Nov. 27-29, Germantown, Md.

R. L. Schwoebel (5123), "Low Energy Electron Diffraction from Surface Steps on UO_2 ," Cornell University Materials Science Colloquium, Dec. 14, Ithaca, N.Y.

R. C. Hughes (5213), "Magnetic Excitations in Organic Charge-Transfer Complexes," Princeton University Physical Chemistry Seminar, Nov. 28, Princeton, N.J.

N. C. Anderholm (5637), "Eclipse Expeditions—1965 and 1966," Sunport Optimist Club, Nov. 22.

D. R. Morrison (5256), "The Future of Mathematics in Computing Science," Awards Dinner, Albuquerque Council of Teachers of Mathematics and University of New Mexico, Nov. 29.

C. S. Johnson (7252), "A Citizen's View of the State of the Union," Sunport Optimist Club, Nov. 29; "Can We Solve the Problems of Juvenile Delinquency?" Albuquerque T-VI, Dec. 5; "Logic and Alcohol—Do They Mix?" South Valley Optimist Club, Dec. 6.

R. J. Everett (9315), "Biological Problems Associated with the Use of SNAP Devices in Space," Colorado State University Department of Radiation Biology, Dec. 1, Fort Collins.

M. M. Sluyter (9321), "The Hall Effect in the Magnetogasdynamical Boundary Layer on Rotating Bodies," University of Florida graduate colloquium, Dec. 5, Gainesville.

G. L. Cano (5235), "The Atom, Atomic Energy and Some Applications," Belen Rotary Club, Nov. 29.

Retiring



Largus E. Moore, an electronics technician at Sandia Laboratory, retired Dec. 4. He joined Sandia in August 1948 and for the past 12 years has been assigned to Special Test Equipment Design Division 2441. Before coming to Sandia, Largus had his own radio repair shop in Socorro.

Mr. Moore has two sons—one in California and the other in Alaska—and four grandchildren.

His retirement plans are indefinite. He has sold his home and purchased a mobile home, located at 4300 Prospect NE.

SEGA Golf Club Elects Officers

Jerry Smith (7252) is the newly-elected president of the Sandia Employees Golf Association (SEGA) for 1968. Also elected were Art Littleford (2442), vice president; Gil Eggert (7122), secretary-treasurer; Paul Callies (2444), and Emil Kadlec (5611), members of the board of directors. Jerry Shinkle (1322), 1967 president, will serve on the board.

Mr. Kadlec was appointed handicap chairman; Mr. Callies will be league director; and Mr. Shinkle will be the tournament director.

SEGA membership in 1967 numbered 322. Fifty teams participated in the evening league and 36 teams played the week-end league. Fourteen tournaments were held.

Within a few weeks, SEGA will start a 1968 membership drive. Plans call for league play to begin about May 1 and end Sept. 1 to allow time for championship playoffs. Additional membership information is available from the new officers.

Sandia Safety Signals

Vacuum Bottles:

An employee in a Canadian plant suffered an unusual eye accident while spooning soup from a vacuum-type thermos bottle. Apparently the metal spoon cracked the glass lining of the bottle, causing it to explode and project broken glass fragments out of the opening. If you use a vacuum flask for soup or other products, pour out the contents.

Promote Safe Bike Riding

A coaster brake is a requisite for younger children since they cannot readily get their fingers around controls of hand brakes with sufficient squeeze for sudden stops.

Two optional items will make the bike safer to ride. A basket or saddlebag to carry objects so that both hands are free for steering, and reflective tape to make the bike easier to see at night. Place two short strips on handlebars, two long strips on front forks and three short red strips on rear fender or appropriate place.