

NEW DATA PROCESSOR for Tonopah Test Range receives its Sandia nameplate from L. H. Minnear (7222), design engineer, and (left) F. R. Steele (7231), who will combine the processor with other instrumentation at TTR.

## Many Sandians Cooperate on New Data Processor for Tonopah Range

A Sandia-designed data processor is being "debugged" here prior to shipment to Tonopah Test Range. There it will become an integral part of a system to record test data and to reposition tracking instruments 10 times a second even though they are located miles apart.

L. H. Minnear (7222) is design engineer for the input data processor. At TTR, F. R. Steele (7231) is the system engineer who will combine the processor, a new computer, and a line printer with existing equip-



R. L. SHAUM (7222) is modifying one of several hundred transistor circuits in this card drawer of the Tonopah-bound data processor. The racks behind him each contain some 200 printed circuitry boards.

ment at the range and with other equipment on order. The system is expected to be in limited operation by September.

Design on the new system started a year and a half ago and since then the work has required a combination of many crafts, trades and professional skills.

Basic information for the processor is supplied via microwave channel by angle measuring equipment and radar at two stations on opposite sides of the range, five miles and seven miles away from the data collection center.

"The input processor consolidates this information, putting it into the time and language format necessary for the computer to understand," Mr. Minnear explains. The processor also retains information on digital data tape. After the test is over, the tape is played back through a DDP-124 computer which recomputes values into engineering units and feeds this information into a line printer for data editing. In this form the project engineer can take a quick look at results.

At the same time, the information received by microwave channel is computed into a form to position and focus telescopes at the tracking stations. Although normally five or six stations are used intermittently during a test, the system could operate as many as 22 stations with parallax corrections for each. Ten of these tracking instruments require azimuth and elevation readings; the other 12 also require slant-range information.

Only 50 milliseconds elapse between acquisition of the original data, computing the trajectory and impact point, and feeding the modified information into the tracking stations. The farthest station, which contains a Contraves (cinetheodolite)

(Continued on Page Four)

### Target Acquisition Study

## JTF-2 'Simulator' Provides Low Level Flight Data

"You really get the feeling of danger and the need to react; it's that realistic."

Dick Pass of Program Planning Division 9213 was describing the JTF-2 "simulator" now in use in Bldg. S340 on Sandia Base. The simulator program is part of the continuing data collection activities for Joint Task Force Two's mission of evaluating effectiveness of low level aircraft penetration and target acquisition.

The pilots, military personnel from all services, "fly" the simulator and record the instant they spot the targets. They have received a briefing on the mission and an orientation to the simulator. They sit in a regular F-86 cockpit, and a giant 24-foot curved screen provides a panorama of the countryside streaking by.

The film was shot last summer over the test courses flown by JTF-2 planes over areas of Arkansas, Louisiana and Oklahoma. It was filmed with a special wide angle lens on 70 mm film. The simulator's projector uses another wide angle lens to spread the image a full 160 degrees on the curved screen. From the cockpit, the view can only be described as "real."

"Some pilots pull back on the stick instinctively as they pass over the hills and drop into the valleys," Dick says. "By

varying the speed of the film projection, we can "fly" at speeds up to 916 mph. At an altitude of 200 feet, that's scary."

Some 125 pilots have flown the simulator. More are scheduled. The course is the same as that flown in reality by other pilots last summer. The simulator pilots hit the "pickle button" as soon as they see the targets. In this manner performance in the simulator can be computed and compared with the "real" performances. Out of the mass of data will come useful numerical values and probability estimates for man-machine performance under a given set of conditions. The results ultimately will influence design of future weapon systems and military tactics.

Dick describes the simulator as a "marriage of existing pieces of hardware." Duane Dewerff of Test Projects Division 9215 was the project engineer responsible for the simulator facility development. C. E. Ingersoll of Program Planning Division 9213 is project engineer for the simulator operation.

H. E. Guttmann of Systems Reliability Division 2152 is the Sandia human factors specialist in charge of the experimental program.

# SANDIA LAB NEWS



Vol. 19, No. 11, June 2, 1967

SANDIA LABORATORIES

ALBUQUERQUE, NEW MEXICO  
LIVERMORE, CALIFORNIA

OPERATED BY SANDIA CORPORATION FOR  
THE U. S. ATOMIC ENERGY COMMISSION

## A. F. Cone Elected to Grade of Fellow, American Society for Quality Control



A. F. Cone, manager of Quality Control Department 2430, has been elected to the grade of Fellow in the American Society for Quality Control.

The citation as Fellow reads in part:

"Mr. Cone has been a leading educator and quality control director. He has held management positions with the Martin Company and Sandia Corporation. His ASQC efforts in the Albuquerque Section and on the national level have been outstanding. . . ."

Announcement of the honor was made at a dinner meeting of the Albuquerque Section of ASQC May 16. The national presentation of the citation was made during ASQC's national convention in Chicago June 1, but Mr. Cone was unable to attend.

He is en route to London, England, to participate in the program of the European Organization for Quality Control. He was one of four U.S. representatives invited to present papers. Theme of the conference is "Practical Realization of Quality and Reliability" and Mr. Cone will discuss "The Customer's Role." (Arrangements for the London conference were made before the election to Fellow was announced.)

He will be presenting the same paper to senior officers of the Electrical Inspection Directorate of Ministry of Technology, Bromley, Kent, England; and will hold un-

classified discussions of practices relating to standards, measurements, inspection and quality control with the National Physical Laboratory in Teddington, Middlesex; and Mechanical Engineering Laboratories in East Kilbride, Scotland.

Mr. Cone has been active in ASQC for 18 years. He helped organize the Albuquerque Section and has served as chairman in addition to other elected and appointed posts.

Currently, he heads the national ASQC Vendor-Vendee committee and is vice chairman of the ASQC General Technical Council which coordinates the activities of six ASQC divisions and nine technical committees.

He is also chairman of the Quality/Reliability Engineering committee of the Electronics Industries Association, a post he has held for five years.

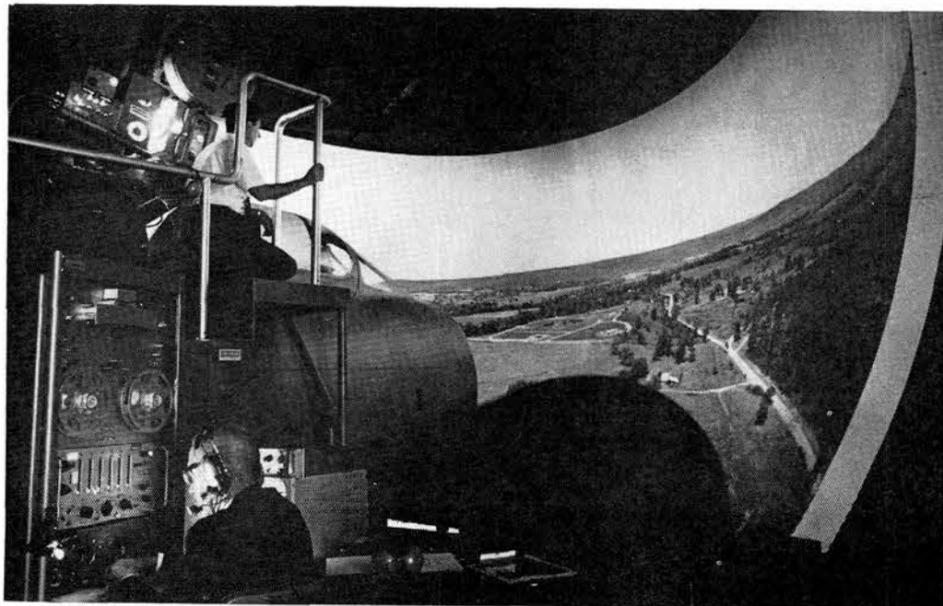
Mr. Cone joined Sandia in November 1949 and has worked in the areas of quality control and quality assurance.

He received his BS degree from Grand Island College, Neb., and his MA degree from the University of Nebraska.

Prior to joining Sandia, he was director of research and quality control for Harnischfeger Corporation, Houses Division, at Port Washington, Wis., for two years, and was chief of quality control laboratories with Glenn L. Martin Company, Baltimore, for two years. He was chief of engineering laboratories with the Glenn L. Martin Nebraska Company from 1942-45. From 1931 to 1941 he was superintendent of schools at Dunbar and Brock, Neb.

### President Hornbeck Named To National Advisory Panel

President John A. Hornbeck has been appointed to membership on a National Advisory Panel to the Laboratory Astrophysics Division of the Institute for Basic Standards, National Bureau of Standards. The appointment was made by Dr. Frederick Seitz, president of the National Academy of Sciences-National Research Council. The term will continue through June 30, 1970.



CURVED SCREEN and special 70 mm projector give pilots "flying" this JTF-2 simulator the realism of a low level penetration and target acquisition mission. Dick Pass (9213) in left foreground operates the simulator's control and data collection console.

## Editorial Comment

On June 14, 1777, almost a year after the signing of the Declaration of Independence, the Continental Congress approved and adopted a design for the American flag—alternate red and white stripes and white stars on a blue field. In 1818, Congress ordered that the flag should be limited to 13 stripes, symbolizing the 13 original states, and that whenever a new state is admitted, a new star be added on the July Fourth following admission. (The 50th star was added on July 4, 1960, following the admission of Hawaii.)

Pennsylvania is the only state that recognizes June 14, Flag Day, as a legal holiday. For the rest of our nation the recognition of the June 14 anniversary is proclaimed each year by the President of the United States. It was first proclaimed for national observance by President Wilson in 1916.

The flag is, of course, honored the year 'round as a symbol of America's freedom and heritage—with the unfortunate exception of a very few people who choose to defame the flag as an expression of their violent disagreement with American policies.

However, virtually every American seeks to express allegiance to our flag "and to the republic for which it stands."

Working on a military installation, we are exposed to a ceremony not common to most civilians—the daily 5:30 p.m. "Retreat." It is proper for civilians to observe this two-minute ceremony and participation is quite simple.

At the first sound of the Retreat music, one should stand at attention facing either the flag or the music. A cannon will be fired and "To the Color" will be played as the flag is lowered. At the end of the music the ceremony is completed. Persons in a car when the ceremony begins, should stop the vehicle, get out, and render the courtesy.

Flag Day is proclaimed once a year; respect and honor for this symbol should continue the year 'round.

## Take Note

William P. Mahaffey, Motion Picture Production Section 3465-2, will conduct a program on motion picture production techniques at the 76th International Exposition of Professional Photography July 23-28 in Portland, Ore. Sponsored by the Professional Photographers of America, the session is expected to attract about 500 registrants.

Bill has served as an instructor in film editing at Winona School of Professional Photography near Warsaw, Ind., and has received a number of industrial film awards.

\* \* \*

One of the more popular exhibits in downtown Tonopah during the recent Military Appreciation Day event was Sandia's closed circuit and videotape system operated by Ken Datz, Lloyd Young (both 7231) and Bob Oswald (REECO).

In addition to live-coverage of passers-by, the men recorded the parade on videotape and had many requests for reruns.

The TV system was part of the Sandia exhibit (prepared by Divisions 7232 and 3433) which also showed tracking cameras and rocket payload systems.

\* \* \*

Stanley F. Harvey (4151-1) is the newly elected president of the Albuquerque Chapter of the National Association of Accountants. He was elected May 18 along with directors J. R. Coleman (4131-4), Edward H. Gallegos (4137) and Howard A. Romme (4113).

\* \* \*

J. W. McKiernan (9331) was elected president of the New Mexico Council of Technical and Scientific Societies at the annual meeting May 11. Vice president is Don Spatz (9331), A. B. Church (7262) is secretary and W. F. Scott (7263) is treasurer. Leroy Hassebrook (2241), retiring president, will serve as a director. The Council membership is composed of representatives of various technical and scientific organizations. It is a coordinating body and provides a central information service to member groups.

\* \* \*

M. M. Sluyter (9321) has been invited to become a member of an American Institute of Aeronautics and Astronautics (AIAA) national sub-committee concerned with continuing education.

AIAA has expressed interest in Sandia's Unified Science and Engineering course, Educational Aids Program, Technical Development Program, and Out-of-Hours Courses which they consider very advanced compared to most aerospace industry's educational programs.

## Events Calendar

June 7—Philadelphia Orchestra, Eugene Ormandy, conductor. UNM Concert Hall. For reservations tel. 277-3121.

June 8, 10, 11, 15, 17, 18—"Tevye der Milchiger," a folk-drama in Yiddish. Old Town Studio, 1208 Rio Grande NW. For reservations, tel. 242-4602.

June 9-11, 16-18, 23-25—"Ghost Sonata" by August Strindberg. Corrales Adobe Theater.

June 10-11—Santa Barbara campground. New Mexico Mountain Club, leader George Steck, tel. 299-2313.

June 11, 14, 18, 21, 25—June Music Festival. Lyric Art String Quartet of Houston with soloists, UNM Recital Hall, 8:15 p.m.

June 14-25—Tennessee Williams' "The Rose Tattoo." Greer Garson Theatre, Santa Fe.



CHARLIE HINES (3244) is serving as a member of the six-man State Parks and Recreation Commission, responsible for the 23 state parks in New Mexico.

## Serving on State Parks Commission Is Exciting, Demanding for C. L. Hines

Since last January, Charles L. Hines (3244) has served as one of the six members of the State Parks and Recreation Commission. This is the policy-making body responsible for the 23 state parks.

A non-salary, part-time position, the work is exciting and demanding Charlie finds. He is working every spare evening, weekends, and taking vacation time to keep up with the expanding programs in state parks.

Recently, he was at a meeting in Carlsbad with city and Chamber of Commerce officials discussing the possibility of establishing a new zoological and botanical state park in the area. He has visited Caballo State Park near T or C, Oasis State Park near Portales, and Navajo State Park in the Four Corners area. He plans to visit all 23 parks within the year.

In the meantime, he attends meetings in Santa Fe to work on plans for expansion of Conchas State Park near Tucumcari—a golf course, air strip, swimming pool, and new lodge facilities are planned—and discuss details of the opening of the new Villanueva State Park near Las Vegas this summer.

He is involved in audits of concessionaires, licensing regulations for boats, camping fees and even the problem of how to get rid of the skunks at Bluewater.

"I enjoy being involved," Charlie says. "The state parks are an important part of Governor Cargo's program to promote tourism in the state. We are responsible for an operating and maintenance budget of more than three-quarters of a million dollars and involved in negotiation of revenue bonds and matching federal funds for capital improvement of the state parks."

Great things are happening in this area."

More than three million persons visited in the state parks in 1966, Charlie reports. This was a 50 percent jump in the number from the previous year and a similar increase is expected in 1967.

"Outdoor recreation is becoming more popular as more people have more leisure time," Charlie says. "An example of the interest in the out-of-doors is the number of camper rigs in the Sandia parking lots. Five years ago, there were few, if any, of these around. Now there are dozens."

To meet the growing need for outdoor recreation, Charlie sees a general upgrading of the quality of facilities offered by the state parks. An example would be the new facilities at Conchas. In other areas, more campsites in parks will be furnished with electricity, water, and rest rooms while lakeside parks will have more boating facilities and docks.

"The budget is always a problem," Charlie says. "New facilities financed by revenue bonds still require maintenance and operation funds. The legislature reduced this budget slightly this year. Camping fees provide the Department about \$28,000 a year and this is an important part of our operational funds. But we have confusion in this area when vacationers can't understand why their 'Golden Eagle' federal permits won't get them into state parks."

The camping fees are necessary, Charlie says, because of the great numbers of out-of-state users of the New Mexico parks. The fee enables them to finance part of the operational costs.

"We feel the New Mexico State Parks—from Pancho Villa park in the south to Navajo park near the Colorado border—are the greatest attractions in New Mexico for tourists. We have great variety in scenery and excellent facilities. The Commission's job is keeping the parks in good shape and expanding to meet the needs of our own people while attracting visitors to the state."

Charlie has been interested in conservation for many years. He was president of the Albuquerque Wildlife and Conservation Association for four years.

He served in the state legislature in 1957-58 and was chairman of the State Board of Public Health in 1961-62.



STARS for the Minuteman flags flying at Sandia and Livermore Laboratories are presented to President John A. Hornbeck by R. Duane Saunders, Assistant to the Secretary of the Treasury. The stars were awarded in honor of the continuing high participation of Sandia employees in the U.S. Savings Bond program. Currently, 85 percent of Sandia employees are participating and investing \$103,000 per month in savings bonds.

## SANDIA LAB NEWS



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ALBUQUERQUE, NEW MEXICO  
LIVERMORE, CALIFORNIA

Operated for the United States Atomic Energy Commission by Sandia Corporation

Editorial Offices, Albuquerque, New Mexico  
Employee Publications, Rm. 112, Bldg. 800,  
Tel: 264-1053  
Editor: Robert C. Colgan

Staff: Cherry Lou Burns, Robert P. Gall,  
Donald E. Graham, Bill Laskar

Public Information, Livermore, California  
Rm. 138, Bldg. 912, Tel: 447-5100, Ext. 2387

William A. Jamieson, supervisor  
Staff: Matthew J. Connors, Lorena Schnolder

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A TREE ROSE that blooms with 10 different varieties of patented roses was produced by horticultural budding. Jaime B. Batalla (8222-2) wraps the 11th budding area which should produce a Helen Traubel rose in a few months.

## Extensive Rose Budding Produces Unusual Tree Rose for Sandian

A tree rose with 10 different patented roses blooms in the Livermore garden of Jaime B. Batalla (8222-2). It is the result of the horticultural process known as budding.

Jaime admits that his unusual tree rose came about by chance.

The day he bought the plant he expected to enjoy a rose called "San Francisco." It didn't happen. Knowing the wild rose root system of *R. multiflora* and *R. agrifera* was hearty, he decided to make the plant more attractive by budding. In time, roses such as Chrysler Imperial, Charlotte Armstrong, South Seas, Tropicana, and six others produced a profusion of color.

According to Jaime, tree roses take years longer for commercial growers to produce than bush roses. Although as many as four varieties of roses on one trunk are available on the market, most rose growers find that only one or two roses of the four will survive beyond a two-year period.

Budding roses is second nature for Jaime. He has spent 26 years in the experimental and commercial aspects of plant growing. In the fields he put about 3200 buds in tree roses in a day. In 1950, he selected initial stock of 20,000 plants for a nursery in the Philippine Islands.

Jaime uses the shield or "T" method of budding.

In this method, a "T"-shaped cut  $1\frac{1}{2}$ -2 inches long is made between the nodes of an established tree rose branch. The cut

is deep enough to expose the wood just beneath the outer bark.

A shield-shaped bud (with a thin layer of wood) is cut from the stem of the new rose's current year's growth.

The bud is then inserted into the "T"-shaped cut and firmly tied with a special rubber tape. The tape serves two purposes — it keeps moisture within the branch and prevents outside moisture from rotting the wound. And it provides the close contact of the bud and branch tissues which is essential to successful budding.

Within 30 days, the bud will be plump if the budding "took." In another 90 days, roses should appear. Jaime usually removes the branches above the budding area just as new growth starts. This allows the maximum amount of nourishment to go to the new bud.

People who are used to hearing one name for one tree rose or bush must pay close attention while visiting the Batalla garden. In addition to his unusual tree rose, there are many others among the 90 plants that have two, three, or four names per tree rose — all products of budding.

Visitors to the garden (and they have included judges from the San Francisco Bay Area rose shows) wonder why Jaime doesn't show countless blue ribbons as evidence of his talents.

"To cut a rose for display purposes means that the rose will live only one or two days," says Jaime. "In my garden they are here for all to see for a much longer time."

## Camp Shelley Accepting Reservations for Season

The popular Sandia recreation spot, Camp Shelley located in the South Lake Tahoe area, will open for the season on June 16.

According to the Livermore Area Recreation and Park District which operates the facility, reservations for camp space are being taken locally at the recreation center on 8th Street, Monday through Friday, 9 a.m. to 4 p.m. Reservations may be made for periods up to two weeks.

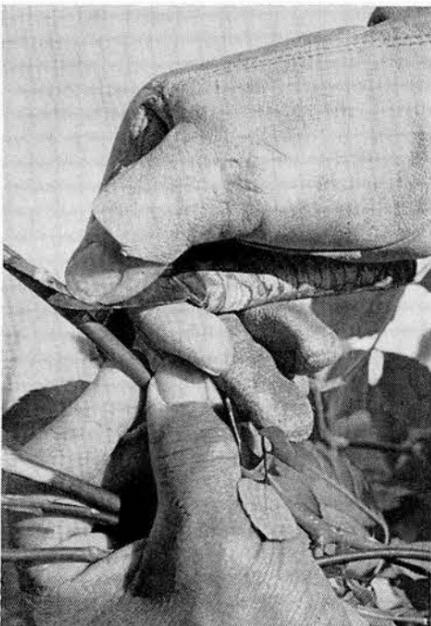
The camp is close to Baldwin Beach (Lake Tahoe) for swimming and boating. Nearby lakes and streams offer good fishing.

Twenty-five sites are available at the camp. Each campsite consists of a parking area large enough to fit a car and a small trailer, a cleared space for a tent, and a picnic grill and table. Washroom, shower and laundry facilities are also available.

Average driving time to the camp is about four hours on U.S. 50 and Highway 89.

A ranger will be on duty from the opening of the camp until closing day Sept. 5.

Further information can be obtained by calling 447-6565.



MAKING A "T"-SHAPED cut in the branch of an established tree rose is one step in the budding operation that produced an unusual tree rose for Jaime Batalla.

## Supervisory Appointment



JAMES A. MOGFORD to supervisor of Analytical Division 8149, effective June 1.

After joining Sandia in September 1961, Jim worked with a betatron in a physics research group. In March 1965, he transferred to what was then Theory and Analysis Division 5231 where he worked on computer problems concerning weapon effects. Two months ago he transferred to the then newly-created Radiation Division I 7112.

Before coming to the Laboratory, Jim conducted theoretical studies of particle accelerators at Midwestern Universities Research Association in Madison, Wis., for some three years.

He received his MS degree in physics from the University of Wisconsin in January 1959 and completed his course work there for a PhD degree. He was awarded a BS degree in physics from Texas Technological College in June 1956.

From January 1951 to November 1954, Jim served with the U.S. Navy and spent about two years aboard an aircraft carrier in the Korean area. He is a member of Sigma Pi Sigma.



LEAD ROLE IN LIGHT OPERA—Bob Harks (8161) is singing the lead role of Billy Bigelow in the Diablo Light Opera Company's current production of Rodgers and Hammerstein's "Carousel." Assistant stage manager for the production is Broward Moss (8253). The musical play will be presented at the Walnut Creek Civic Arts Theatre Saturday evenings and Sunday matinees through June 11.

## Welcome . . . Newcomers

Apr. 25 - May 22

California	
Karen L. Anderson, Livermore	8235
Sherry L. Cruz, Livermore	8253
Elizabeth J. Dominguez, Livermore	8253
William E. Forbes, Jr., Livermore	8235
James D. Gall, Santa Clara	8112
Patricia J. Harmon, Livermore	8235
Thomas C. Reitz, Livermore	8253
Leland J. Sandahl, Alameda	8252
Kathleen D. Vlught, Livermore	8145
Holly B. Williams, Hayward	8235

New Mexico	
Russell J. Hutchinson, Albuquerque	8168

Returned from Leave	
Mary Ellen Jacob, Pleasanton	8232

\*Denotes rehire

## Dr. Robert Noyce to Address Colloquium

Dr. Robert N. Noyce, group vice president of Fairchild Camera and Instrument Corporation, will be guest speaker at the Livermore Laboratory Colloquium on June 6.

His talk, "Integrated Circuits and Then What," will include a discussion of what the future might hold for integrated circuits.

As one of the founders of Fairchild Semiconductor in 1957, Dr. Noyce established the research department and directed the initial development of the silicon mesa and planar transistor lines. In 1959 he became vice president and general manager, and led the company's pioneer efforts in the volume production of integrated circuits. Three years later, when the company became a division of Fairchild Camera and Instrument Corporation, he was elected a vice president of FCI. He served in these capacities until his promotion in 1965 to group vice president with responsibility for both the Semiconductor and Instrumentation Divisions.

Dr. Noyce received his BA degree in physics and mathematics from Grinnell College in 1949 and a PhD degree in physical electronics in 1953 from the Massachusetts Institute of Technology.

He joined the research division of Philco Corporation in 1953 as leader of a solid state physics group which worked on the development of germanium and silicon high frequency transistors. He became a senior staff member of the Shockley Semiconductor Laboratory of Palo Alto in 1956, where he directed the design and development of diffused silicon transistors and investigated the basic recombination process in semiconductors.

Dr. Noyce is a member of Phi Beta Kappa, the American Physical Society, and a Fellow of the IEEE. He holds 15 patents on semiconductor methods, devices and structures.

Further information concerning the Colloquium is posted on the bulletin boards. Tickets are required for admission. D. E. Gregson (8130) is serving as host for this Colloquium.

## Livermore Notes

Hans Birnbaum (8138) and his son, Don, took first place in the May 6 Best Ball Twosome Tournament of the Sandia Employees Golf Club with a low net score of 62. Second place went to John Barnhouse (8226-2) and Walt Dzugan (8212) with 64. The tournament was played at Livermore's Las Positas golf course.

First place trophy for individual play went to Ron McClellan (8135) for a low net score of 68.

\* \* \*

Chabot College has announced that a new general information brochure, describing the college's educational program and new campus, is now available to the public.

The free brochure contains a map of the campus, detailed description of the campus, a cost and facility summary, information on the education programs and details on enrollment and cost.

Individuals who wish a copy should contact the Public Information Office, Chabot College, 25555 Hesperian Boulevard, Hayward, Calif., 84545.

\* \* \*

W. V. McGuire (8252) recently spoke to the students of the shop drawing classes at San Ramon High School in Danville, Calif. His slide-illustrated presentation discussed "Drafting as a Career."

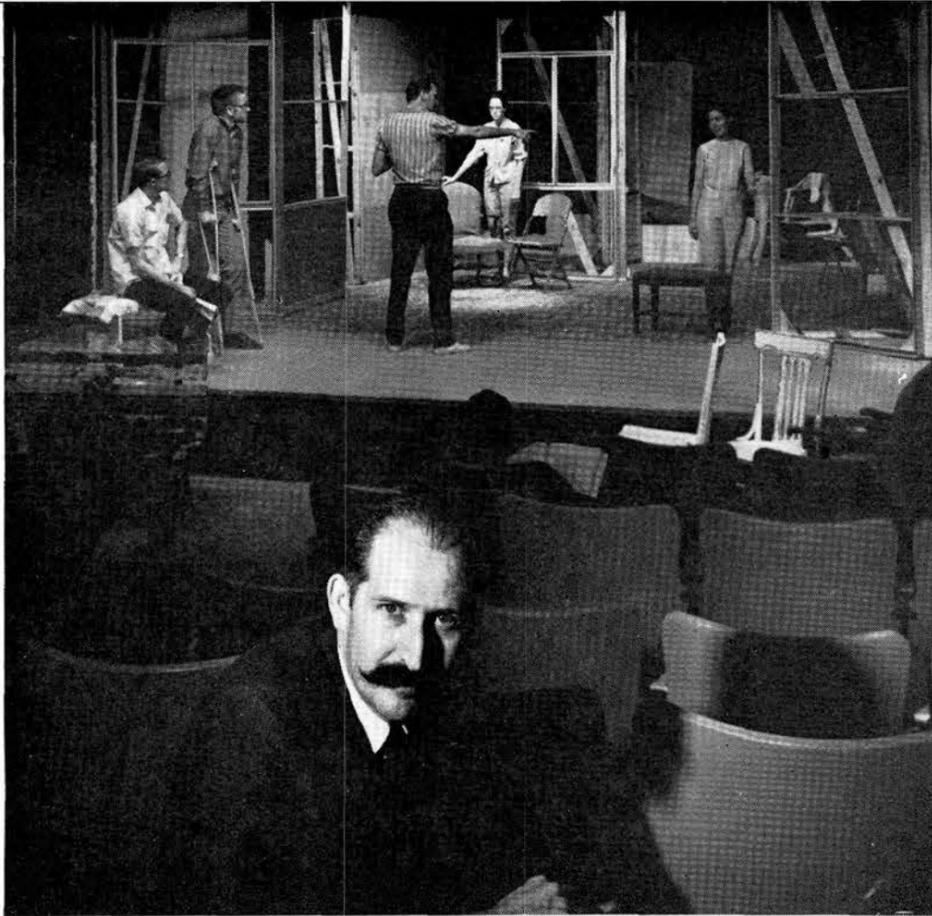
## Sympathy

To Gerry Strandin (8167) for the death of his brother in Seattle, Wash., May 13.

PAGE THREE

JUNE 2, 1967

SANDIA LAB NEWS



REHEARSAL of forthcoming production of "The Ghost Sonata" is an appropriate setting for Joe Laval (3465), president of the board of directors for the Corrales Community Theatre.

## Corrales Community Theatre Attracts Audiences to Off-Beat Productions

Joe Laval (3465) is a photographer by profession, but his main off-the-job interest at the present time is one of the other creative arts — the theatre.

He's not a playwright, nor is he an actor. He's president of the board of directors for the Corrales Community (Adobe) Theatre and attributes this affiliation to his wife's interest in acting — her enthusiasm for the theatre was contagious.

He describes the duties of the 15-member board as "selecting plays from suggestions made by the director and then seeing that things progress smoothly through the last performance." The members also promote the sale of season tickets.

"The Ghost Sonata" by August Strindberg is now in rehearsal and will open June 9. The offerings are presented on Friday, Saturday and Sunday evenings over a three-week period. Three plays will be presented this season directed by Jim Morley of the University of Albuquerque.

When the acting group first organized, plays were presented in a one-time coffin factory on Corrales Road. As the audience increased, the organization received permission to use the historic-but-abandoned San Ysidro church. It can accommodate slightly over 100 playgoers. The main improvement to the physical structure this year has been plastering the front of the church. "It may not look as picturesque as when the adobe showed through, but it is safer for bystanders," Joe says.

It is truly a community theatre in that several entire families participate in the productions. While Dad is practicing his actor's lines, Mother may be making cos-

tumes, and the children are painting scenery, helping with lights and running errands. "Occasionally our plays have juvenile roles which give the kids a chance to appear on-stage as well," Joe says. "However, the Corrales theatre is also strongly supported by Albuquerque residents, not just in the audience, but also on-stage and back-stage."

The most successful plays have been off-beat ones which previously have not been produced in the area. "The Ghost Sonata" is one of these. It is a "chamber play" (meant to be presented in a private home), has some humor, and the theme is "no one is really what he appears to be." The actresses wear huge papier-mache wigs, the arte nouveau costumes are most unusual, and half of the acting parts have no lines.

Joe has not been tempted to try reading for a part, but he admits that some day he would like to design a set — probably the result of a photographer's inclination to look at surroundings in terms of composition and color.

## Welcome . . . Newcomers

May 15-26

<b>Albuquerque</b>	
Margaret I. Key	3132
Herman T. Lee	3415
Paul Metoyer	4574
Lloyd G. Miller, Jr.	4253
<b>California</b>	
*William J. Hudson, Fullerton	3413
<b>Illinois</b>	
James M. Opalka, Chicago	7124
Allan R. Champion, Urbana	5133
<b>New Jersey</b>	
Charles Arnold Jr., Cherry Hill	1111
<b>New Mexico</b>	
*Harry C. Hardee, Jr., Las Cruces	1541
* Denotes rehired	

Continued from Page One

## TTR Data Processor

camera, is 17 miles from the data collection center.

In addition to Mr. Minnear's work on the processor, R. L. Shaum (7222) designed and built some of the circuits, designed a special power supply, and assisted in assembly and "debugging." Bennie A. Montoya (4231-1) devoted about six months to the intricate wiring required in the input data processor. R. S. Hagins (7222), a mechanical engineer now on military leave of absence, designed the mechanical cage to hold logic cards. About 95 percent of the printed circuitry cards were commercially manufactured, but the remaining special circuits were designed and built in Sandia's Printed Circuitry Section 4233-3, N. A. Cordova, supervisor. Gary West (7231) designed the output processor and C. M. Sanders (4231) is responsible for the wiring.

Programs (software support) for the system have been created by R. E. Domres (9422), Jeff Gorin (7222), K. A. Bixler, J. P. Skaates and C. M. Vick (all 9425). W. D. Love (7222) devoted considerable effort to system software debugging and computer operations. A manual on the theory of the system and how it works is being written by V. E. Gibbs (7522).

## Deaths



B. I. Burrell

Bernard I. Burrell of Quality Engineering-Nonweapon Activities Division 2435 died suddenly May 18. He was 44.

He had been employed at Sandia Laboratory since December 1948.

He is survived by his widow, Marguerite (3133).

## Retiring



Her most recent assignment was in Bldg. 836.

Mr. and Mrs. Baca have 12 children—eight sons and four daughters—and 28 grandchildren. Their youngest son is in the Navy and they have two grandsons in the service.

Mr. Baca is retired and Isabel says that for the present, they will stay home and visit with friends and relatives in this area. Later in the summer they plan to visit three of their children who live in California. They are also considering making California their future home.

Isabel L. Baca of Janitor Service Section 4574-4, retired from Sandia May 31. She had been a janitress at the Laboratory since May 1954, and had worked in several buildings in Tech Area I on both day and night shifts.

Island (Ill.) Arsenal in the Ordnance Division.

Following his retirement Harold will join his wife in Mesa, Ariz., where for the past few weeks she has been overseeing the construction of their new home. Their address will be 325 North 80th Place.

"We'll stay in Mesa until the weather gets too hot and then take a vacation in the mountains for some fishing," Harold says. "We also plan some trips in Arizona and Colorado and later will tour the Eastern seaboard."



Arthur G. Everitt of Design Standards Division 2221 will retire June 30. He was employed by Sandia in January 1952 and has worked the entire time in Design Specifications, Standards & Numerical Systems Engineering Department.

partment.

Art has a number of hobbies and interests he plans to keep up with—tennis, fishing, radio-controlled model airplanes, piano, hiking, pack trips. This fall he and Mrs. Everitt will visit relatives in England. Art will also manage a family real estate partnership, which includes apartment and business rentals and a 25-acre orchard in the South Valley.

"Since I'm retiring, I intend to devote more time to social work," Art says. "I'm thinking of volunteering my services to the Peace Corps or VISTA." He is a member of the board of directors of the All Faiths Home.

Mr. and Mrs. Everitt have two children—a married daughter in Portland, Ore., and a son in the Marines.



Harold L. Smith, a quality control department field representative, will retire June 30. He joined the Company in Albuquerque in February 1951 as an inspector. From 1952-55 he was assigned to the Douglas Aircraft plant in El Segundo, Calif., and then transferred to his present position at the West Coast Area Office, Section 2431-4, Beverly Hills, Calif. Before his employment with Sandia, Harold had been with the Rock

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## Sandia Speakers

D. R. Morrison (5256), "PATRICIA—Practical Algorithm to Retrieve Information Coded in Alphanumeric," Southwest Regional Meeting of the Association of Computing Machinery, May 11-12, El Paso.

T. D. Harrison (9331), "Paired Observations, Their Potential as a Control Technique," Interworks Quality Control Conference, May 10-11, Kearny, N.J.

D. E. Hurt (2435), "Detecting Process Shifts and Validating Quality Results by Komogorov-Smirnov Technique," Interworks Quality Control Conference, May 10-11, Kearny, N.J.

R. A. Graham, W. B. Benedick (both 5133) and R. E. Hutchison (7122), "Pulsed Electron Beam Calorimetry Utilizing Stress Wave Measurements in Solid Absorbers," Ninth Annual IEEE Symposium on Electron, Ion and Laser Beam Technology, May 9-11, Berkeley, Calif.

E. D. Jones (5151), "Nuclear Magnetic Resonance Measurements in the NaCl-Type Rare-Earth Group VA Intermetallic Compounds," Sixth Rare Earth Conference, May 6-7, Gatlinburg, Tenn.

B. M. Butcher (1141), "Shock Mitigation in Foam Materials," Stanford Research Institute, April 27-28, Menlo Park, Calif.

Mary M. Campbell (3126), "What to Expect on Job Interviews," speech class, T-VI, April 13, Albuquerque.

M. I. Weinreich (3421), "Sociology of Language," Del Norte High School assembly, May 8, Albuquerque.

D. M. Fenstermacher (7224), "Popular Astronomy," Albuquerque chapter, PEO, May 9.

L. J. Vortman (5232), "Excavation with Nuclear Explosives," ASME, Canaveral Section, May 10, Cocoa Beach, Fla.

D. E. Murphy (2126), "Sandia Corporation," Rotary Club, May 10, Dumas, Texas.

J. W. McKiernan (9331), "Engineering Careers," civics classes, Wilson Jr. High, May 12, Albuquerque.

K. J. Touryan (9326) and R. A. Hill (5122), "Aerophysics Research at Sandia," seminar at graduate aeronautical laboratories, California Institute of Technology, May 15, Pasadena.

R. L. Park (5123), "Chemisorbed Gas Structures in Heterogeneous Catalysis," 1967 Spring Meeting of the Electrochemical Society, May 7-12, Dallas.

T. B. Sherwin (5430), "Sandia Corporation," Arizona Civil Defense and Disaster Assn., May 11, Phoenix.

F. G. Blotner (9321), "Prediction of Electron Density on Re-entry Vehicles," AMRAC meeting, Institute for Defense Analyses, April 17-19, Washington, D.C.

M. M. Sluyter (9321), "Magnetohydrodynamics Phenomena for Re-entry Flight Control," University of Oklahoma School of Aerospace Sciences graduate seminar, April 13; "A Survey of Hypersonic Couette Flow Solutions," University of Oklahoma graduate class of Hypersonics.

A. L. Roark (5261), "A Method for Approximating the Eigenvalues and Eigenfunctions of Certain Integral Equations," 1967 SIAM National Meeting, June 12-15, Washington, D.C.

H. H. Patterson (9230), "A Civilian Look at Vietnam and Southeast Asia," 1967 state convention of Army Military Affiliate Radio System (MARS), May 6, Albuquerque.

E. K. Montoya (9425), "Case History — Real-Time Process," American Management Association Orientation Seminar on Design and Application of Real-Time Systems, May 31-June 2, New York.

Jean Langston (5100), "My Job As a Secretary," Albuquerque High School senior clerical students, May 10.

K. A. Smith (3100), "Sandia Corporation's Equal Employment Opportunity Program," AEC Contractors Personnel Conference, May 17, St. Petersburg, Fla.



G. J. Uhl

G. Lopez

Grover J. Uhl, an inspector in Inspection and Calibration Division 4213, died May 25 after a long illness. He was 47.

He had worked at Sandia Laboratory since October 1956.

Survivors include his widow, two daughters and five sons. (Son James E. Uhl works in Division 7321.)

Gregorio Lopez, a retired Sandia employee, died suddenly May 7. He was 76.

He retired in March 1956 after working five years in Janitor Service Division.

He is survived by his widow, a son and a daughter.

# Service Awards

20 Years



R. D. Becker  
4253



J. B. Landon  
4221



D. P. Saunders  
3463



K. W. Seaver  
4123



R. E. Summer  
2523

15 Years



Leo Arellano  
4153



W. R. Barton  
9324



John Bashaw  
3242



Edny Bierner  
4131



N. A. Branson  
2223



P. L. Brown  
5631



C. P. Canady  
2564



R. L. Champion  
5611



G. W. DeSato  
2211



P. A. DiDomenico  
4135



W. V. Elrod  
1414



John Ermi  
1423



Olivia Geffe  
4600



Nicanor Gonzales  
4513



R. J. Guerin  
4114



H. P. Hanna  
4137



Johnnie Johnson  
9000



M. A. Kuliasha  
4545



R. K. Leahy  
4622



J. D. Manweller  
5635



F. L. McFarling  
9331



H. L. Myers  
7336



Ben Petterson  
7215



R. L. Peurifoy  
5510



C. H. Purdue  
2442



W. L. Shoemaker  
5121



W. F. Stamm  
4543



J. R. Sundberg  
7513



W. E. Taylor  
2411



A. D. Thornbrough  
7268



H. S. Wallis  
7531



G. J. Wilson  
1415



A. E. Winblad  
5520



J. W. Wistor  
7244

10 Years

June 2-15

A. D. Catuna 2431, R. D. Mitchell 4252, F. F. Norris 4541, G. T. Gatlin 4611, J. P. Johnson 7262, R. L. Baldonado 7522, I. B. White 9311, G. W. Dyckes 1113, R. B. Foster, Jr. 2411, D. M. Morrison 2451.

G. E. Ingram 5122, A. D. Sayers 7255, J. J. Ridinger 2121, J. S. Browning 2554, E. T. Ronan 9224, R. M. Halsey 9225, R. M. Simmons 4545, R. J. Hart 5635, H. O. Faulkner 8252, W. R. Armstrong 1334.

F. L. Chavez, Jr. 1425, E. F. Massey 2114, J. P. Keiner 2125, D. R. Hinds 2442, P. L. Higginbotham 2431, M. E. Holcomb 2451, K. W. Butler 4252, W. T. Smith 4363, H. N. Woodall 5222.

A. C. Arthur 7246, R. O. Sundahl 8151, R. H. Johnson 8117, Janet H. Silva 8115, J. R. Vieira 8166, G. H. Brockmoller 8223, C. O. Duimstra 9226, P. A. Fjelseth 9233, H. R. Spahr, Jr. 9314.

J. E. Suazo 9323, F. W. Muller 2113, Eunice S. Savage 2234, W. L. Brown 2444, H. S. Levine 5234, R. V. Tullar 9228, E. G. Sanchez 9411, J. R. Kidd 9414, M. L. Dawson 1521, W. R. Long 8119, J. S. Anderson 8155, J. C. Ludington 8253, Varoqua M. Yoakum 3428, Santiago Anaya 4574, and J. M. Moeller 7268.



BACK FROM MILITARY SERVICE, Lois Nelson (9412) is now working as a keypunch operator. She served three years in the Women's Army Corps.

## Sandia Woman Back From Military Leave

Lois M. Nelson is back at Sandia after a three-year leave of absence for military service — the first woman employee to be granted this benefit.

While working in document control, Lois decided she wanted to enter the computer field and checked with the local U.S. Army recruiting office. With a three-year enlistment in the Women's Army Corps, one can select a specialty school. Lois "joined up" on April 6, 1964, and after nine weeks of basic training in Alabama, she was sent to an enlisted WAC's school in New Jersey for nine weeks of training as a computer operator.

After the specialized training, the enlistee can list a preferred area for assignment, but as Lois says, "Sometimes you get your choice, sometimes you don't." She couldn't complain. For 10 months she was stationed at the Presidio in San Francisco and for the balance of her tour of duty she was assigned to Fort Shafter, three miles from Waikiki Beach in Hawaii. In both instances she worked with RCA 501 computers.

Duty at the Presidio was more like being in the Army. The WACs pulled KP regularly, had to march in monthly parades, and while Lois was there she had to go through the "gas chamber" (the WACs don regulation gas masks to enter a room filled with tear gas and chlorine and once inside they pull off the masks to demonstrate vividly the effectiveness of this type of protective gear). At Fort Shafter it was more like working at an eight-hour-a-day civilian job.

A native of Albuquerque, Lois' parents thought it was great that she wanted to enlist. "Their attitude was that if I really wanted to do it, do it! If they had discouraged me, they felt I would resent it. Furthermore, I was the only 'serviceman' in the family," she explains.

Upon return to Sandia last month, Lois reported to Administration and Reports Division 9412 as a keypunch operator.

### SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● 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**

10-ACRE TRACTS, mountain land, fully wooded, adjoining National Forest, 10 miles from 66 on South 10. Lee, 299-1114.

ROBERSON 4-bdr., 1 1/2 baths, LR & DR carpeted, den w/tp, dishwasher, breakfast bar in kitchen, sprinklers, corner lot, sell for appraisal. Dignan, 298-2958 after 5:30.

MANKIN 3-bdr., pitched roof, bath, lg. LR, attached garage, near Eastdale Shopping Center, \$11,500. Petersen, 298-1022.

3-BDR., 5/4 FHA loan, \$900 assumes equity, near Base and schools. Stomp, 298-3824.

3-BDR., den, fp, DR, maid's rm., fenced patio, dbl. garage, beamed ceiling, carpet, drapes, built-ins, 1/2 acre, NW valley. Slater, 255-7505.

NEAR BASE, 3-bdr., FR, oversize garage, workshop, carpeting, drapes, covered patio. \$91/mo., GI mortgage, \$300 down. Johnson 298-8514.

3-BDR HOUSE near Lady Fatima Church, hw floors, AC, fireplace, complete landscape, new carpet, \$13,500. Nelson, 329 Morningside NE, 255-2364.

SNOW EXECUTIVE—3-bdr., 1 1/2 bath, over 1800 sq. ft., landscaped, carpeted. AC. Holt, 299-5943.

3-BDR., 1 1/2 bath, den w/tp, built-ins, AC, utility rm., large walled backyard, landscaped, \$15,700. 5739 Fairfax Dr., Paradise Hills, Oliveira, 898-2170.

MOSSMAN 3-bdr., DR, paneled den, fp, large lot, near schools, appraisal \$21,725. 6505 Natalie NE. Moore, 299-3758.

**CARS AND TRUCKS**

'59 PLYMOUTH 4-dr. sedan, V8, AT, PS, \$240. Gholson, 299-2663.

MORRIS PICKUP w/camper, sleeps three. Lerke, 265-0780.

'63 CHEV.-6 pickup, new engine, 44,000 miles, mud & snow tires, new tires in front, camper shell. \$1500. Smith, 344-0361.

'60 FIAT, 4-dr. sedan, \$300. Gals, 256-9180.

VOLKSWAGEN sun-liner sedan, low mileage, trade for Chevrolet or GMC pickup truck. Smitha, 299-1096.

'61 VW Kombi, 47,500 miles, 3500 on rebuilt motor, 4500 since trans. overhaul, recent tune-up. \$600. Lauson, 298-2769.

'60 RAMBLER 4-dr. sedan, AT, R&H, best offer. Durkee, 268-3836.

SPORTS CAR, '61 TR-3 convertible, tonneau, removable steel top, R&H, luggage rack. Luckey, 298-9914.

'57 GMC 4-wd. 3/4 ton pickup. V-8, HD tires, R&H, hubs. \$750. Alberts, 282-3704.

'57 LATE MODEL Ford V-8, 2-dr. ranch wagon, stick shift, overdrive, one owner, \$300. Anez, 299-6301 after 5:30.

'66 DATSUN pickup, R&H, 4-spd. transmission, will sell below average retail price. Post, 298-0481.

'56 OLDS 88 2-dr. hardtop, one owner. Frettem, 299-1588.

'64 VOLKSWAGEN, \$995. Forster, 298-2373.

MODIFIED FORD roadster pickup, full race Mercury flat head engine, needs very little work. \$400. Driscoll, 298-4641.

'60 VOLKSWAGEN sedan, new factory-rebuilt engine, clutch & brakes. \$695. Kyser, 296-1338.

'56 CADILLAC Fleetwood, 4-dr., Hydra-Matic, PB, PS, P windows, P seats, air, sig-seeking, pre-selector radio, P antenna, was \$6300, now \$345. Grapp, 298-0267.

**MISCELLANEOUS**

JEWELRY FORMALS, size 7-8; shoes 5 1/2 B-6 1/2 B; white fur jacket; styled blonde wig; electric can opener; semi-formals, size 7-8. Mueller, 299-1079.

WALNUT BOOKCASE double bed; 21" TV; complete living rm. set; 5-drawer chest; ladies new Sunbeam elec. razor; table radio. Gobell, 298-6682.

AIR CONDITIONER, window-type, used 2 mos., cost \$129, sell for \$85. Gallegos, 1409 Guaymas Pl. NE, 299-7270.

15' ARISTOCRAT low liner w/electric brakes, load leveler, safety skids, electric water pump, dbl. gas bottle, cost \$1825, sell for \$1350. McKelvey, 256-9787.

DOORS, paneled, one 24" and two 30", \$5 ea.; 12-yr.-old mare, trained, very gentle, excellent health, wormed, all shots, \$150 or trade. Wladika, 255-9166 after 7:30.

STEREO SYSTEM, AM-FM/mult. radio w/record changer, oiled walnut cabinet, 7 speakers, 1 yr.-old. Martin, 298-6644.

DEEP FREEZE, 20" upright. Temple, 242-9092.

27" BOY'S Schwinn 10-spd. bike w/IRC type wsw thornproof tires, light w/generator, lock, hand-brakes, chrome rims, etc. Fletcher, 298-2142.

SEVERAL riding horses, all w/excellent dispositions. Henderson, 898-3675.

MOBILE HOME, 10x50 Venus 2-bdr., carpeting, cooler. Nielsen, 345-0213.

HEATHKIT 8" speaker, \$6; crib w/mattress, \$17; artificial Christmas tree, \$9; golf clubs, bag, cart. Alexander, 268-1513.

ROOM evaporative type cooler w/stand, \$20; room evaporative type cooler without stand, \$10. Cashin, 242-3345.

AKC German Shepherd, female, 7 mos., has all permanent shots. Riley, 299-5869.

4 X 5 Crown Graphic w/flash gun, extension flash, extra reflector, Vulcanoid case to hold camera and accessories, \$150. Goodwin, 256-2216.

C-B radio, international Executive, \$180; Mosley Devant special antenna w/75' cable, \$25; "1-2" transistorized microphone, \$18; car antenna, trunk mount, w/cable, \$12. Eifer, 299-3970.

HAND lawn mower; electric lawn mower; 3 old TVs; cast iron bathroom sink/fixtures. Nevin, 298-0383.

8' SLIDING GLASS DOOR, \$80, sold new for \$150. McCoach, 298-5960.

GOLDEN RETRIEVER puppies, AKC, available June 24. Lewis, 299-0588.

HUNTING BOW, Grove's Spitfire, 56", 41 lb., left-handed, \$30. Babcock, 256-2705.

PIANO, parlor grand size made by Baldwin; rm. size portable evaporative cooler; lawn mower. McCallum, 268-1158 after 5.

MOTORCYCLE, '66 Yamaha sport, 305cc. Cross Country, loaded w/extras, \$650. English, 256-2730.

ARKAY 35-watt Hi-Fi amp w/pre-amp, \$20; full-size working pinball game, \$25. Allen, 255-7406 after 6.

UTILITY TRAILER, 6'x8'x5', \$75. Hansen, 268-3261.

FEMALE GERMAN SHEPHERD, purebred, no papers, 6 mos. old, had shots, \$35 takes dog and her house. Duvall, 299-8744.

GASOLINE powered mower, \$35; electric organ, \$25; girl's English bike, \$30. Abbott, 264-2647.

'60 CUSHMAN scooter, 9 hp, recently rebuilt, saddle bags and crash helmet, \$150. McClure, 243-0791.

SEWING MACHINE buttonhole attachment, complete w/templates, \$3. Swain, 264-4498.

CUSTOM trailer hitch for '59 Ford, \$3.50. Schneider, 299-6243.

ROLL FILM adapters, 120 square, for models "23" and "45" Graphic cameras; target pistol .22 w/2 barrels. Alvino, 255-6339.

TWO fillies, yearlings: 1/2 American Saddlebred; and registered 1/2 Arabian. Sandusy, evenings or week-ends, Los Lunas 865-7593.

SHEFFIELD, white dinnerware, 50 pieces, never used. Crank, 299-6401 after 6 p.m. or all day Sat.

SIX MONTHS old cocker spaniel, fawn colored, \$20. Gilbert, 299-9141.

LUMBER; Bagby golf cart and bag; fill dirt; dishwasher (Kenmore portable), and soft water conditioner (Inland Marine). Chandler, 296-3323.

HI-FI 3-sp. record changer, AF/FM radio, limed oak cabinet, record storage, matching extension speaker, 6 speakers, \$55. Sublett 298-1004.

STORAGE TRUNK 36L x 21W x 23H, \$10; HO equipment consisting of two Santa Fe freights, \$15 each, Santa Fe passenger, \$16; two train power pack, \$8. Rayner, 299-7429.

PUPPIES, English springer spaniels, purebred, AKC registered, liver and white, eight weeks old. Barth, 345-0172.

TOY POODLE pups, AKC registered, \$50 to \$85. Schreiner 268-4159.

ZENITH 21" b/w portable TV; Fairchild professional turntable, walnut base, arm and stereo cartridge; patio block 8"x16"x2", 10 cents each. Browning, 299-6384.

CAMPING TRAILER, 16 ft. Fireball, sleeps 6, self-contained, electric brakes, \$1390, hitch available. Toft, 298-5678.

FENDER duo-sonic electric guitar, metallic red, w/hard case and cord, \$110. Rufsvoid, 268-5970.

2 TIME-MASTER Dictaphones, cost new \$365 each, now \$250 each. Checchio, 243-4026 or 243-6351.

RUGER REVOLVER .22 with interchangeable cylinder for magnum ammo. Also new holster. Both \$70. Freshman, 299-9263.

AQUARIUM, 10-gal., all accessories. \$20. Precit, 298-3551.

TURNTABLE, 2-speed w/Rek-o-cut arm & Weathers cartridge, \$35; guitar, solid body cutaway, 2 pickup, \$40. Ashworth, 296-2855.

**WANTED**

CAR POOL from Cielito Lindo NE. Cnare, 299-3604.

ONE person to form a part-time car pool from Northern Bellhaven Addition to Bldg. 836/802. Ewing, 298-1404.

TENT, preferably umbrella or small camp tent, size 6'x8' or 6'x6'. Moore, 268-1683 after 5.

JAVELINA hides w/bristles intact. Emrick, 296-3527 after 5:30.

FREE PIANO BENCH, practically any condition as long as it is usable. Schubeck, 298-6697.

.44 MAGNUM D.A.: powder measure; powder scale; auto tow bar; small cider press; rotten hay for mulch. Maak, 282-3482.

WANT TO RENT 2-bdr. apt. or house, furnished, from June 15 thru Sept. 15. Contact Mrs. E. Gwash and leave information (SC summer employee), 299-7974.

IRRIGATION PUMP, 1 1/2 to 2-inch output, electric motor Abeyta, 636-2524 or P.O. Box 182, Peralta, N. Mex.

DINING ROOM TABLE, single pedestal and six chairs. Nogle, 299-3863 after 5.

RIDE or car pool from Paradise Hills to Tech Area I. McGinnis, 898-3170.

SHOTGUN, double-barreled w/hammers, barrels, may be Damascus or fluid steel, in good or better condition. Wilson, 282-3225.

RIGHT HAND 36" aluminum screen door; redwood or heavy duty patio furniture; screen (need roll 36' long, 5' or 6' wide), and boy's racing bike. Chandler, 296-3323.

RIDE to Chicago, July 1, share driving and expenses, safe driving record. Guist, 299-9060 after 5.

BABYSITTER in Holiday Park area. Keep two children during the summer, only one child before and after school during the school year. Taylor, 299-5559 after 5:30.

**FOR RENT**

UNFURNISHED APTS: 2-bdr., 3501 Thaxton SE, \$65/mo.; 1-bdr., 517 Chama SE, \$65/mo. Chavez, 298-5091.

LUXURY 3-bdr. apt., carpets, drapes, AC, range, refrigerator, pool, yard, \$125/mo. White, 298-3630.

NE 2-bdr. AC, utility rm., carpet, walled back yard, circular driveway, refrig., stove, washer-dryer rough-in, near Freeway, Silva, 255-8881.



TEENAGERS will celebrate summer recess with a "School's Out Go-Go" at the Coronado Club Tuesday, June 6. On the bandstand will be the Jeremy Bentham Four — from left are Rick Peterson, Dick Orr, Kit McDermott and Paul Kuhn. The dancers are Cathy Mayhew, Gary Workman, Teri Shelby and Gary Thom. The bash is scheduled 7:30 - 10:30 p.m.

### Coronado Club Activities

## Teenagers Will Celebrate June 6 With End of School Go-Go Event

With school recessed for the summer, teenagers will celebrate at the Coronado Club Tuesday, June 6, with a "School's Out Go-Go." The Jeremy Bentham Four will be on the bandstand and will rock and roll from 7:30 to 10:30 p.m.

Parent members must pick up tickets (members 25 cents, guests 50 cents) by 5 p.m. June 6. Although the limit for guests is three per member, these teenage bashes have filled the ballroom in the past — as many as 200 energetic teenagers on the floor at one time. It's something else.

### Patio Warmup

The new patio area will be the scene of an outdoor party from 4 to 8 p.m. tomorrow. Music, hors d'oeuvres, and refreshments at social hour prices will be featured. Admission is free (members only, please) and dress is informal (bikinis preferred).

### Social Hours

Tonight, something new will be featured at the social hour buffet — Indian food such as curry and rice, fish and chips, and cheese blintzes. Phil Graham's group will

### Encourage College Education

## Students Can Get Federal Aid

Federal financial-aid programs for students were described by Dr. C. V. Galbreath, director of higher education for Region VII of the U. S. Department of Health, Education and Welfare, in a recent news release urging New Mexico citizens to encourage talented young people to go on to college.

He points out that high school students may be able to obtain financial help to go to college under one of four Federally supported programs. These financial-aid programs available to eligible students in any field of study are the National Defense Student Loan Program, College Work-Study Program, Educational Opportunity Grants Program and the Guaranteed Loan Program.

Under the National Defense Student Loan Program, students may borrow directly from their colleges. Repayment and interest do not begin until after the student has ended his studies, and may be extended over a 10-year period. An undergraduate student may borrow up to \$1000 each academic year to a total of \$5000. Graduate students may borrow as much as \$2500 a year to a maximum of \$10,000. There is a special cancellation provision for student borrowers who become teachers.

The College Work-Study Program provides jobs for students who need employment to help pay for college expenses.

The Guaranteed Loan Program provides a means for students to borrow directly from their bank, credit union, savings and loan association or other eligible lender. While any student may borrow, the program is intended primarily to ease the heavy burden of educational costs for middle-income families. For students whose adjusted family income is less than \$15,000 a year, the Federal Government pays the entire interest (six percent) during the school years, and half the interest (three percent) during the repayment period which begins when studies are terminated.

make the happy music and somebody just might try to charm a snake.

Italian food the way mama mia used to make it will be the highlight of social hour next Friday, June 9. Frank Chewiwie will maestro the rain dancing.

On Friday, June 16, Tommy Kelly will make the mood music for the Polynesian food buffet. Mike Michnovicz with accordion will be in the main lounge.

### Bridge

Duplicate bridge will be played at 7 p.m. Monday, June 5. ACBL Charity bridge will be played at 7 p.m. Monday, June 12. Ladies bridge will meet at 1:15 p.m. Thursday, June 15.

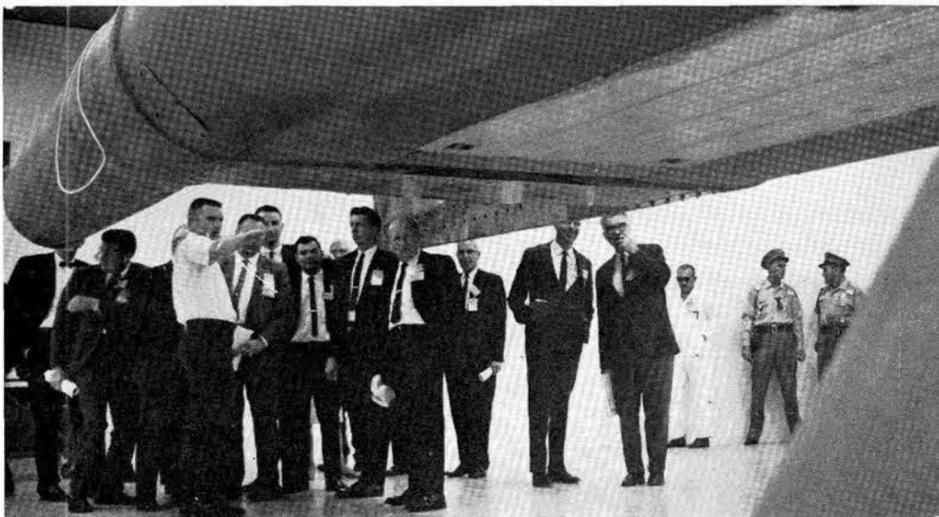
### Swimming and Diving Teams

Starting gun for the summer program of the Coronado Club swimming and diving teams will be at 7 a.m. Saturday, June 3. All youngsters interested in competition swimming should attend this organizational meeting. Mike O'Donnell, swimming and diving coach, will outline the complete summer program. For additional information, call Jim Stoeber (3142), tel. 256-2439.

The loans are "guaranteed" by a State agency or a private nonprofit agency designated by the State.

Educational Opportunity Grants are intended for undergraduate students in such extreme financial need that without the grants they could not attend college. The students, as long as they remain in good standing, are eligible to apply for grants ranging from \$200 to \$800 each year of undergraduate study.

Dr. Galbreath stressed that senior high school students who are planning to attend college this fall and who need financial assistance to meet educational costs should contact the financial aid officer at the college of their choice and apply for a job, loan, grant or other assistance for which they may be eligible.



CONFEREES ATTENDING the recent Institute of Electrical and Electronics Engineers Region Six conference in Albuquerque took the opportunity of visiting some of Sandia's environmental testing facilities in Area III. John V. Otts (7324) describes the centrifuge.

## Supervisory Appointments

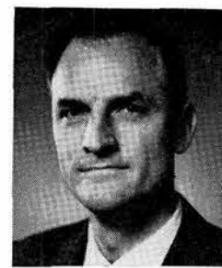


JOHN C. CRAWFORD to supervisor of the newly created Ferroelectric Research Division 5143, effective June 1.

John has worked in Magneto Physics Research Division 5141 since he joined Sandia in June 1962. There he has conducted research in explosively driven high-energy generators and plasma experiments.

He was awarded his PhD degree in physics from Kansas State University in August 1962 and received his MS degree in physics from the same school in June 1959. He received a BS in physics and mathematics from Phillips University in June 1957.

John is a member of Sigma Xi and Blue Key honorary fraternities.



CHARLES H. KARNES to supervisor of Deformation of Structures Division 1142, effective June 1.

Charles has been studying shock wave propagation and the dynamic properties of materials in Deformation of Materials Division 1141 since he joined Sandia in June 1963.

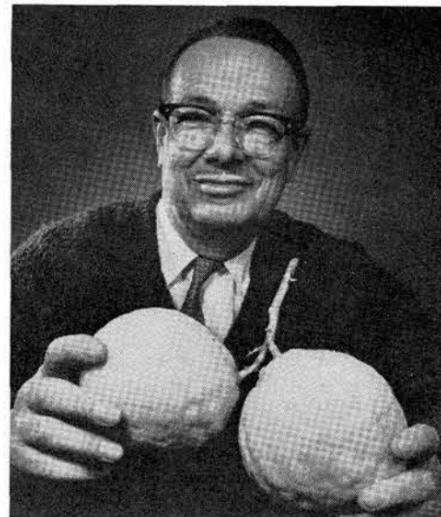
Before coming to Albuquerque, he was completing the requirements for his PhD degree in engineering mechanics at the University of Texas. The degree was awarded in January 1964. He also received his MS degree in engineering mechanics and a BS in mechanical engineering from the same university in January 1960 and June 1958 respectively.

Charles is a member of Sigma Xi and Phi Kappa Phi.

## Promotions

Robert T. Tuffnell (4121) to Staff Member Administrative  
John A. Deveneau (4382) to Staff Member Administrative  
William C. Purchase (4382) to Staff Member Administrative

W. A. Stephenson (1411) to Staff Associate Technical  
Charles P. Stanton (1432) to Staff Associate Technical  
Oran D. May (4251) to Staff Associate Technical  
James K. Fjelseth (1333) to Staff Assistant Technical  
Clinton D. Tuthill (4224) to Staff Assistant Technical  
Gene E. Oriley (8112) to Staff Assistant Technical  
James K. Reid (9221) to Staff Assistant Technical  
Waldo Lucero (4574) to Janitor  
Patricio Garcia (4212) to Receiving Clerk  
Dorothy S. Evans (4213) to Inspector  
Ormand W. Williams (4631) to Technician  
Tom C. Garcia (4631) to Technician  
Virginia R. Barkhurst (3126) to Typist Clerk  
Rosemary Kilmer (3126) to Typist Clerk  
Janet A. Pappas (3126) to Typist Clerk  
Jake Romero (3415) to Mail Clerk  
Terry L. Otero (3415) to Mail Clerk  
Emery Chavez (2234) to File Clerk  
Donna L. Lewis (4333) to Record Clerk  
Peggy L. Schmidt (4333) to Record Clerk  
Ike L. Davis (4333) to Messenger  
Demetrio P. Gallegos (3415) to Mail Clerk  
Susan C. Hopkins (3126) to Secretarial Steno  
Gloria Mae Smith (3126) to Secretarial Steno  
Leona M. Chosa (4362) to Stenographer Clerk  
Shirley D. Gonzales (4333) to Teletypewriter Operator  
Juan J. Armijo, Jr. (2232) to Reproduction Service Clerk  
Silviano Cendalaria, Jr. (3416) to Message Center Equipment Operator  
Rudy R. Garcia (3416) to Message Center Equipment Operator  
William H. Brown (9411) to Tabulating Equipment Operator  
Orlando Torres (9411) to Computer Facility Operator  
Roger J. Bouscal (8245) to Chauffeur  
Donna L. Lindbloom (8116) to Secretarial Typist  
Janet A. Bernacil (8161) to Secretarial Typist  
Diana L. Medina (8145) to Senior Clerk  
Shannon P. Houk (8145) to Data Processing Clerk  
Thelma G. Harrell (5540) to Secretary  
John J. Brennan (1411) to Laboratory Assistant  
K. Janet Willis (5200) to Secretary  
Thelma F. Foster (7100) to Secretary



THESE GIANT LEMONS were grown on a potted indoor tree by Earl Craven (4543).

### Giant Squeezer Needed For These Local Lemons

Earl Craven (4543) is probably the biggest citrus grower in Albuquerque—at least on the basis of his current crop of lemons which are four inches in diameter. Both of them.

The fruit came from a Ponderosa lemon tree, a variety with a tendency to produce large fruit on dwarfed trees. When Earl purchased the plant five years ago, it was the size of a small tomato plant. It started bearing three years later and now always has either fragrant blooms or fruit in some stage of development.

The tree is about four and a half feet tall and is in a 14-inch pot. Due to the small size of the container, the plant must be watered daily and is fed a teaspoon of commercial liquid plant food once a week.

"The fruits are thick-skinned but very juicy," he says. "It only takes one of these lemons to make a gallon of lemonade."

During the winter Earl keeps the lemon tree in his den next to a large window with an eastern exposure. When danger of frost is past, this tree and a half dozen other citrus plants are moved outdoors to a partially shaded area.

The next crop will be fresh limes—conventional size.

### Congratulations

To Mr. and Mrs. Ken J. Touryan (9325), a daughter, Lara Audreen, May 24.

## Sandia Safety Signals

### Children's Aspirin

"CHANGING TIMES" reports that, starting June 1, 1967, children's aspirin bottles will hold no more than 36 pills of one and a quarter grains each, compared with the five grains in regular pills. This will reduce the danger to children who get hold of the aspirin bottle by accident. The best protection, however, is keeping ALL medicine out of reach of children.

### Reaction Time

Sudden changes in barometric pressure can reduce a driver's efficiency by lowering his power of concentration and lengthening his reaction time, according to weather experts of the World Meteorological organization in Geneva, Switzerland.

Their figures indicate that during a period of decreased atmospheric pressure—a thunderstorm, for example—human reaction is about six percent slower than normal.