

Incomplete ECP Returns Hold Promise of New Record

Incomplete returns from the current Employees' Contribution Plan drive show 87 per cent of the cards in and a total of \$155,241 pledged or paid in cash to date. Some 361 new members have joined the plan.

Last year, Sandia employees contributed a total of \$168,000 to ECP.

"The campaign went smoothly," Ray Schultz (7320), ECP committee chairman, said. "The cards were distributed and returned efficiently by all concerned. About the only cards out are those of employees who are absent from work. Captains and solicitors did an outstanding job."

Payroll deductions are up. The new members who chose this method of contributing "once and for all" brought the total of Laboratory employees participating by payroll deduction to 4,782. At last count, about 80 per cent of Sandia employees are giving to ECP by payroll deduction.

Last year, 81.2 per cent of Sandians were members of ECP. Cur-

rent tally of the ECP results shows that 83 per cent of Sandia employees are members of the plan who give at least \$12 annually. About 90 per cent of all Sandia Laboratory employees are contributing some amount during the drive.

"Only those employees who were not members of ECP were personally solicited during the campaign," Mr. Schultz said. "ECP members were contacted through company mail. This is the basic idea of ECP—to provide an efficient method of contributing a sizeable gift in small amounts over a long period of time. Much collection time and effort are saved and the funds are channeled effectively to the United Community Fund and other participating ECP agencies."

"The response is gratifying," Mr. Schultz continued. "Once again, Sandians have shown their awareness of community needs. ECP committee members are grateful for the response. The community is grateful for the funds."

1851 Sandia Employees in Back-to-School Movement

The urge for self improvement motivated 1851 Sandia Laboratory employees to enroll in classes this fall. Most of these Sandia students—1421—are taking courses in Sandia's Out-of-Hours Educational Program administered by Technical and Trades Training Division 3132. The remainder—430—are taking University level courses under the Educational Aids Program or the Technical Development Program.

Under the Educational Aids Program, 325 Sandians are working toward various degrees. Pursuing PhD degrees are 38 employees, 75 are working on Master's degrees, and four are after a second Bachelor's degree. Twenty-three Sandians are enrolled as graduate students in a non-degree program, 78 are juniors or seniors, 62 are freshmen or sophomores, and 45 are enrolled as undergraduates in non-degree programs.

One hundred and five Sandians are enrolled in the Technical Development Program. This figure represents two classes, one scheduled to complete the program in 1964 and the second in '65. Electrical engineers number 75 and mechanical engineers number 30 in this program.

Staff Training and Education Division 3131 coordinated University enrollments. University level, technical institute level, and trades and clerical level classes are offered in the Out-of-Hours Educational Program at Sandia Laboratory. Instructors are drawn from the entire laboratory. They are experts in their field and have usually had previous teaching experience. Classes are held during noon hours or after work.

Out-of-Hours courses are offered by the Sandia Laboratory training organization because courses

Russian Language Seminar Planned For Advanced Students

Former students of Russian are invited to attend the Advanced Russian Seminar held during the noon hour on Mondays, Wednesdays, and Fridays in the conference room of Bldg. 804.

Conducted by Marcel Weinreich (3421), the seminar is designed particularly for employees interested in both updating and upgrading their scientific-technical Russian language capability. Material being offered is within the reach of those who have previously completed Russian courses 205A, 205B, 205C, or their equivalent.

Employees desiring to attend should first contact Marcel at ext. 48148.

of special interest to Sandia are not available in public institutions.

In the trades and clerical area, 309 Sandians are enrolled in classes designed to support the Laboratory's skills areas and apprenticeship programs.

Technical Institute classes have 327 employees enrolled. These courses are especially designed for staff assistants and for graded employees interested in technical areas. Curriculums are offered in Electronic Technology, Mechanical Technology, Drafting and Design Technology, and Industrial Technology.

University level courses have attracted 785 employees. These courses are designed primarily to provide review and present new information on recent technological advances.

"The Out-of-Hours courses are continually studied in light of the changing technical requirements of the Laboratory," H. R. Shelton, supervisor of Technical Training and Education Section 3132-1, said. "New courses are developed in an attempt to keep abreast of these new changes and needs."

As the *Lab News* went to press this week, final count of Out-of-Hours students was not complete. Enrollment in this area will probably reach 1500, Mr. Shelton said.



CONTROL ROOM of the Sandia Engineering Reactor Facility was visited by a group of scientists attending a National Topical Meeting on Aerospace Nuclear Safety sponsored by the American Nuclear Society.



LATEST TALLY of the current Employees' Contribution Plan drive shows a total of \$155,241.00 pledged or collected and 87 per cent of the cards turned in. Helping with the count are, from left, Clif Shaw

(4252), Ed Sutherland (4253), and Polly Pine (4333), solicitors; Marion Tucker (4131), ECP treasurer; Cliff Taylor (4254), captain; and Ray Schultz (7320), ECP committee chairman. ECP raised \$168,000 last year.

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J. R. Holland Provides Two Articles for Newly Published Encyclopedia

Two articles have been contributed by J. R. Holland (5135) to the recently published Encyclopedia of X-Rays and Gamma Rays.

One article was on "Pole Figures." The second, "Use of Computer Techniques in Processing X-Ray Diffraction Data," had as its co-author J. R. Brathovde (formerly of 5414).

The encyclopedia, published by the Reinhold Company, contains 800 pages and contributions from about 300 individuals.

ASME 4th Annual Symposium to Study 'Technological Explosion'

"Technological Explosion" is the theme of the 4th Annual Symposium of the New Mexico Section of the American Society of Mechanical Engineers. Scheduled Nov. 1-2 at the University of New Mexico, the Symposium will have a number of Sandians on the program.

General Chairman of the Symposium is G. C. McDonald (1550).

Keynote address will be delivered by E. H. Draper, Vice President, Development and ASME Region VIII Vice President. Mr. Draper will also chair the first morning session.

Afternoon session Nov. 1 will be chaired by R. A. Bice, Vice President, Engineering for Manufac-

ture. R. B. Powell, Vice President, Personnel, will moderate a panel discussion on "Educational Obsolescence and How to Combat It" during the second day's program. D. J. Jenkins, manager of Personnel Research, Training and Education Department 3130, will be a member of the panel. Darrel E. Munson (1113) will present a technical paper, "The Influence of Deformation Mechanism on the Response of Metals in Extreme Environments."

Other Sandia employees on the symposium committee include J. R. Harrison (7521), program; L. H. Stradford (2533), facilities; L. H. Schultz (1552), banquet; J. A. Engelland (1544), publicity; R. F. Stinebaugh (1544), publicity; Richard Kidd (1513), finance; Donald Spatz (1522), finance; D. L. Krenz (7331), student participation; W. A. Adams (1513), proceedings chairman; and H. C. Olson (1552), registration and reservations.

E. H. Copeland (7331) is chairman of the New Mexico Section of ASME.

Coronado Club Will Again Offer Popular Investment Course

The popular Investment Course, offered by the Coronado Club for the first time last winter, will be repeated starting Oct. 4.

The six lectures will be held on consecutive Mondays at 7:30 p.m. in the club ballroom. The talks, highlighted by short films, deal with such topics as inflation, need for common stocks, the New York Stock Exchange, the financial page, monthly investment plans, mutual funds, margin trading, etc.

Arlen B. Crouch and Gordon G. Fry, both Registered Representatives of the New York Stock Exchange, will present the course.

The course is limited to club members, for whom there is no charge.

Editorial Comment . . .

The Answer Must Be "No!"

"The answer must be no unless there is a need to know" reminds a leaflet distributed through the booklet racks last week.

This often-repeated message must never be forgotten even though there is a danger that its frequent repetition may lessen its impact on our memory.

Remember—A person cannot have access to classified information unless such access is authorized. Authorization includes the "need to know." This calls for proof that the information in question is required in order to do assigned work.

United Nations Week

The week beginning Oct. 21 marks the 18th anniversary of the ratification of the United Nations Charter. This historic document was the culmination of a meeting of 50 nations in San Francisco in 1945.

On UN Day, Oct. 24, the actual date of the signing of the charter, people throughout the world will hold observances aimed at rededicating themselves to the aims and ideals spelled out in this document.

Here in summary are the ideals and goals of the U.N., as set out in Article I of the Charter. They are words to live by. To maintain international peace and security.

To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples.

To achieve international cooperation in solving international problems of an economic, social, cultural, or humanitarian character and in promoting and encouraging respect for human rights and for fundamental freedoms for all.

To be a center for the harmonizing actions of nations in the attainment of these common ends.

Congratulations

Mr. and Mrs. W. L. Van Horn (2542), a son, Stephen Craig, Sept. 8.

Mr. and Mrs. Robert Wycoff (2563), a daughter, Tracy Lynn, Sept. 13.

Mr. and Mrs. J. M. Stomp (7323), a son, John Milton, Sept. 13.

Mr. and Mrs. R. L. Smith (1512), a son, Kurt Alan, Sept. 17.

Mr. and Mrs. Richard Coughenour (4113), a son, Michael Richard, Sept. 18.

Mr. and Mrs. J. A. Garcia (4254-5), a daughter, Lecia Ann, Sept. 25.

Mr. and Mrs. John Wirth (5321), a daughter, Lisa Ann, Sept. 20.

Mr. and Mrs. Don Habing (5321), a son, Robert Donald, Sept. 20.

Mr. and Mrs. J. A. Beyeler

(7251), a son, Walter Eugene, Sept. 16.

Mr. and Mrs. J. D. Tebbs (7334-2), a daughter, Tracee, Sept. 26.

Mr. and Mrs. James J. Lang (1543), a son, Gary James, Sept. 20.

Mr. and Mrs. A. F. Brown (1422), a son, Mark Gerard, Sept. 20.

Mr. and Mrs. Tom C. Garcia (4631), a daughter, Sally Ann, Sept. 20.

Mr. and Mrs. Tom S. Oglesby (2322), a son, William Scott, Sept. 25.

Mr. and Mrs. E. W. Shepherd (3425), a daughter, Amy Elizabeth, Sept. 27.

Mr. and Mrs. C. E. Ingersoll (7433-2), a daughter, Kimberly Marie, Sept. 27.

Mr. and Mrs. J. J. Lochtefeld (7324-1), a daughter, Diane, Sept. 28.

Mr. and Mrs. R. D. Volk (1413-1), a son, Michael Allan, Sept. 20.

Mr. and Mrs. Terry P. Warnke (1312), a daughter, Laura Machele, Sept. 28.

Mr. and Mrs. J. D. Aragon (3452), a son, Randall Jacob, Sept. 21.

Mr. and Mrs. W. F. Gamberale (4541-2), a son, Stephen, Sept. 27.

Mr. and Mrs. Jesus Baca (3242), a daughter, Rose Mary, Sept. 20.

Top Toastmistress Urges Improved Public Speaking

The Toastmaster organization and its counterpart the Toastmistresses are well-known for producing entertaining, forceful speakers. But most women make more speeches across the family dinner table than they do across a banquet table. With Toastmistresses, the by-products of the speech training are often the most important.

These by-products include such things as developing poise, overcoming timidity, expressing a point of view objectively and persuasively, even learning the secrets of how to be a good conversationalist.

The Tewa Toastmistress Club, an affiliate of International Toastmistress Clubs, Inc., is seeking new members, according to President Dottie Hickman (3126/2451). This is an ideal time to join since a speech clinic, which will continue until Christmas, has just started. Interested women are invited to attend meetings to see how members learn together.

The next meeting will be held Tuesday, Oct. 22, at 7:45 p.m. in the Albuquerque National Bank Hospitality Room (Washington and East Central). Meetings are normally held the second Wednesday of the month at the First National Bank (San Mateo and East Central) and the fourth Wednesday at the Albuquerque National Bank.

For additional information, call Dottie at 298-3804 after 5 p.m.

Ski Club Seeks Members at Party Being Held Tonight

Persons interested in skiing are invited to attend a membership party given by the Albuquerque Ski Club tonight at 7:30 p.m. at Robin Hood Inn.

According to President Dick Claassen (5100), there will be music for dancing and free refreshments.

The club meets nine times during the winter season. The first regular meeting is scheduled for Oct. 15 at the Albuquerque City Club (atop the First National Bank Building on East Central).

Wedding

Edna Bierner (4131-1) was married to Carl J. Pinner of Albuquerque on Sept. 27. The couple planned a honeymoon in southern New Mexico and west Texas.

Edna has been at Sandia Laboratory for 11 years.

Calamitous Antelope Hunt Has Everything But Antelope

Antelope, phooey!

Hal Baxter and Hyder Burress (both 4543-2) were lucky when it came to the drawing for special licenses to hunt antelope, but they'd just as soon forget about the series of mishaps which followed.

On Saturday, Sept. 28, they drove Hyder's four-wheel drive vehicle to an area south of Portales in Eastern New Mexico. While on a dirt road they thought they saw the farmer (on whose land they were to hunt) driving in the opposite direction. They were almost stopped when Hyder realized that an automobile was bearing down on them from the rear at high speed. (The car had been hidden earlier by the dust cloud behind their moving vehicle.) Hyder jammed down the accelerator, but the car still smashed into their vehicle, which dove into a barrow pit, climbed up the further side, and hung at the top momentarily before slowly rolling over.

Hal landed on Hyder, who was partly under the dashboard. None

of the three involved in the accident was injured, but the automobile was badly damaged.

An hour later, after Hyder's vehicle had been uprighted, the men saw their first, last, and only antelope. The animal was in perfect position but Hyder missed the shot. Hal tried, but his gun jammed.

The next morning they started following dirt roads alongside fences. Soon they had to stop frequently to use a hand pump on the tires, punctured by inch-and-a-half-long mesquite thorns. This worked okay until they had three flats at once. They sat there until a farmer came along with a tank of butane gas and pressure hose in the back of his pickup. The transfusions of butane every two miles worked until the tank was empty, then the farmer took Hyder and the tires 30 miles to the nearest station while Hal waited in the countryside. There were no more calamities and the two finally reached home where discussions of antelope hunting are now discouraged.



—overcome timidity—

President Dottie Hickman

—“Speech training by-products are as important as after dinner speaking” —



—good conversationalist—



—evaluate what you read—



—poise in unfamiliar situations—



—support your point of view—



Eve Baughman (3126/4432)

Take A Memo, Please

All accidental injuries have one thing in common — they hurt.

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Sandia Retirement Offers Special Security for Spouse

Financial security in senior years is one of the aims of the Sandia retirement plan. Combined with Social Security, life insurance, and savings, employees can provide for a reasonable standard of living during retirement.

But what about the employee's spouse?

There is an option in the Sandia retirement plan that you will have to decide upon prior to your 60th birthday. Designed to provide for your spouse after your death, it's called the "contingent annuity option" and it works this way:

By accepting a smaller monthly retirement check, you can arrange for your spouse to continue receiving a retirement annuity after your death. Most women live longer than most men by about five years, according to national statistics. Therefore this option is especially important for the male employees.

In case of an early death, the contingent annuity would prove even more valuable. Here is a story that will illustrate:

Ralph White (the name's fictitious) retired from the company after a number of years in the retirement plan. He and his wife, Mary, had made many plans and were all set to enjoy them. Ralph's retirement check was \$200 per month and the couple's Social Security income was \$180. Ralph had some life insurance, too. This income would make their retired life financially secure.

Tragedy struck only a few months after Ralph's retirement when he was killed in an automobile accident. Mary went into shock and was hospitalized.

When Mary recovered and started paying bills, the magnitude of her loss was even more fully realized.

Ralph's insurance paid for the funeral expenses, but Mary's hospitalization had reduced their savings. Being used to a reasonable monthly income, Mary had to make a drastic adjustment in her standard of living. She continued receiving some money from Social Security—about \$100 per month. Since Ralph had decided against electing a "contingent annuitant" in his retirement plan, the monthly income from the plan ceased, although Mary did receive a death benefit.

Mary's income dropped from \$380 per month to \$100—quite a reduction.

If he had chosen, Ralph could have received \$142 per month from his retirement annuity instead of \$200. After his death, Mary would have continued receiving this amount (\$142) until her death. This is the contingent annuity option. Combined with Social Security, her total income would have been \$242 monthly.

Sandia's Retirement Income Plan provides for the contingent annuity option. In many cases, it will be a most important step for providing survivors with some financial security. In other cases, a normal annuity might be desirable.

Each employee will have to make a decision about the option prior to his 60th birthday. Benefits and Services Division notifies the employee a few weeks prior to that time. If you have any questions about this option or about Sandia's retirement plan in general. At Sandia Laboratory call Benefits and Services Division 3122, Bldg. 610, ext. 52144. At Livermore Laboratory call Employee Services Section 8212-2, ext. 2233.

Mountain Club Plans Three Expeditions Into New Mexico Heights

Two short climbs and a four-day expedition are planned during the next two weeks by the New Mexico Mountain Club, according to Duane Arlowe (7312), president.

Next Sunday, the club will hike up a canyon in the Manzano Mountains. Embudito Trail in the Sandias is the destination for the following Sunday, Oct. 20.

The group will head for Navajo National Monument Oct. 24 to explore the ruins of three historic cliff dwellings—Betatakin, Keet Seal, and Inscription House.

All trips start from Nob Hill Shopping Center at 8 a.m. Additional information is available from Duane, tel. 265-0727.

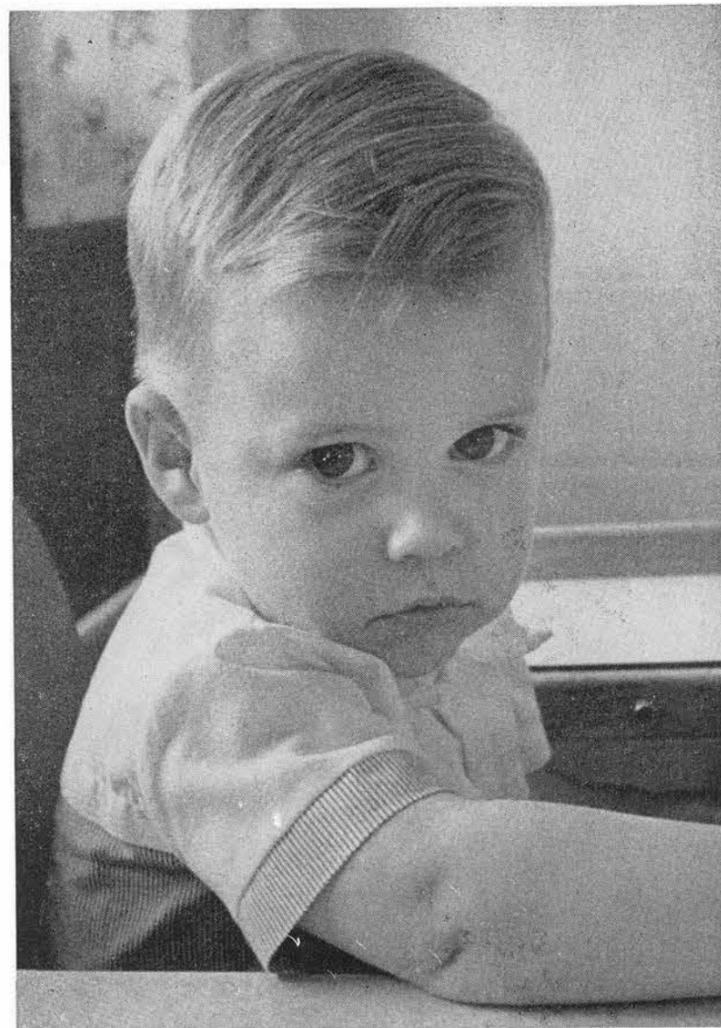
Illinois Alumni to Meet Tuesday, Oct. 22

All alumni of the University of Illinois are invited to attend a dinner meeting Tuesday, Oct. 22, at which movies of the campus and new facilities will be shown.

The Albuquerque Illini Club will meet starting at 6:30 p.m. at the Alvarado Hotel. Dinner will be served at 7 p.m.

The speaker will be Gene Vance, executive secretary of the University of Illinois Alumni Association and former member of Illinois' famous "Whiz Kids" basketball team.

Reservations may be made with Mrs. Lynn A. Fisher, 2305 General Arnold NE, AX 9-2662. Cost of the dinner is \$3 plus tax and tip. Additional information may be obtained from John Colp (7412).



"THANK YOU" says Billy to all Sandia Laboratory employees who contributed to the recent Employees' Contribution Plan drive. Billy, who lives at St. Anthony Home for Boys, is one of thousands helped by the Albuquerque United Community Fund and other participating ECP agencies. Your one gift will work wonders during the year to come.

Today's Music Man Is Family Man--But He's Still Musical

From the picture, you would think that the era of big band swing had returned.

Remember the "flaming forties"? The big bands of Glen Miller, Woody Herman, Tommy Dorsey, and Harry James helped America sing its song of the war years. The music was alternately sad or swinging.

The lyrics of "Serenade in Blue" or "GI Jive" were typical of the ballads and the jump tunes. Out in California, Stan Kenton created "progressive jazz," sort of a screaming brass fanfare backed by a rocking

rhythm section. Latin tunes were becoming more and more popular. Betty Garrett was singing "South America, Take It Away" on Broadway.

The music of the forties and even the earlier lush years of the thirties is the major part of the modern musician's "book," the library of arrangements played during dance jobs.

The big bands are rare, however. Now the combo reigns. And that's where Sandia musicians find their fun.

Usually four or five musicians create a smaller, quieter sound.

The rhythm section predominates—piano, bass, guitar, and drums. Melodies are carried by solo musicians playing either sax, clarinet, trumpet, or trombone.

Of course, rock and roll is here to stay. You define it.

Versatility

"Versatility" is the number one requirement of the modern musician. He has to appeal to the people who remember the old songs and he has to be able to rock for the youngsters. Crowds vary from the two-steppers to high-steppers and the twisters.

The musician's role has chang-

ed. "Back in the old days," Howard Sloane (2413) says, "we were on the road all the time. The band had a name. The leader and the sideman had fans of their own. Records were scratchy things and hi-fi was unheard of. The musician, man, was needed. Nowadays, we're family men. We work regular jobs and only dust off the horn on Friday or Saturday nights. Occasionally, I miss the one-nighters but the new way is more comfortable."

Howard plays piano and vibes. He recently reorganized his five-piece Dixieland band after a sum-

mer playing with Don Lesmen. Howard's band plays his arrangements and has been active in Albuquerque since 1957. He is a member of the Board of Directors of the Musicians Association of Albuquerque, Local 618, American Federation of Musicians.

George Davies (3242) leads a seven-piece organization known as the "Stardusters." He plays a "versatile" style—whatever the crowd wants. Active for more than four years, sidemen with the "Stardusters" include Hank Willers (4233), sax and clarinet; and Carl Hoffman (2544) who doubles on trombone, bass, banjo, and guitar.

Continental Style

Hugh Tallman (4542) heads the just-organized "Rhythm Masters." The group strives for a continental cocktail style featuring an accordion and guitar lead. Sandians playing with this group are Charlie Inberg (4321), bass; and Bob Whitlow (4516), drums.

Tom Kelly's four-piece combo is a jazz unit featuring vocals by the leader. Bob Banks (4122) plays piano and vibes, while Tom Fox (3454) drums, and Bob McDermott (4411) handles guitar. Active more than five years, Tom's group is a regular at the Coronado Club social hours.

The trumpet of Sol Chavez is well-known in Albuquerque. Sol has headed a seven-piece band since 1945 which specializes in a Glen Miller style and a Latin book. Bob Ezell (3465) plays bass.

Chuck Foster (1551) organized a new seven-piece Dixieland group last May. Chuck has played piano with dance bands since the mid-20's.

Rex Elder (1531) describes his combo as "commercial." "We play anything," he says, "and vary our group from four to six pieces." Rex has been organized in Albuquerque for seven years.

Other Sandia musicians who work with other bands include Bob Schowers (2441), who plays trumpet; and drummers Mike Zownir (4252), Leroy Petersen (4542), and Bill Laskar (3142).



SANDIA SWINGERS—Providing music for many of the social activities of Albuquerque are these musicians who work weekends with local combos. From left and around the top are Charlie Inberg (4321), bass; Rex Elder (1531), guitar; George Davies (3242), drums; Carl Hoffman (2544), trombone; Tom Fox (3454), drums; Sol Chavez (4512), trumpet; Tom

Kelly (2543), bass; Chuck Foster (1551), trumpet; Henry Willers (4233), sax; and Bob Banks (4122), vibes. In the center row, standing, are Bob Ezell (3465), bass; Bob Whitlow (4516), drums; and Hugh Tallman (4542), banjo. In front are Mike Zownir (4252), drums; Bill Laskar (3142), drums; Bob Schowers (2441), trumpet; and Howard Sloane (2413), piano, vibes.

People-to-People, in action . . .

European Youths First See U. S. In Livermore Homes

A short time ago, a pretty teenager in Barcelona, two students in Paris, and a pair of newlyweds in Marseilles were packing for their first trip to America.

They all arrived recently in Livermore as guests of Sandia families.

All but the young girl from Spain are college students from France. The French students spent several weeks in the homes of the Jay Gilsons (8151-1), Bob Dougherty

(8158-1), and Hartley Jensens (8123-1) before reporting to Bay Area schools. They arrived in Livermore under the auspices of the Experiment in International Living, a private non-profit international exchange organization.

The young Spanish girl, Marguerita Siches, is staying with the C. P. "Mickey" Rindone (8114-4) family for her senior year in high school. She's here under a program

arranged by the American Field Service, a non-profit organization begun during World War I.

The newlywed couple, Alain and Gisele Guiard-Marigny, were the guests of Jay Gilson and his family. Alain is studying at Stanford University for his Master's degree in electrical engineering. Gisele hopes to find work as a nursery school teacher, a job she held in France.

Alain and Gisele were impressed, as were the other students from France, with the bigness of everything in the United States. "I never thought your bridges were so big," said Alain who speaks English and reads Greek. "I had seen pictures of your bridges while I was in France, but I didn't expect them to be so big." Gisele speaks only French.

Since the geography and climate of their locality in France is similar to Northern California, the couple is getting along fine here, although they find they are drinking a lot more milk in America. They tried peanut butter for the first time and discovered they disliked it intensely.

One of the things the couple noted about American life versus their own is that when you rent an unfurnished apartment in America it usually comes with a refrigerator. In France, an apartment usually comes with everything but a refrigerator.

The couple was also surprised to find Americans shopping no more than once or twice a week for groceries. "In France, everyone generally shops every day for food," said Alain. "Since we don't have freezers like you do here, we can't stock up on food for weeks at a time. Here, you take your bread from the freezer. In France, we take it from the oven."

Jay and his wife also introduced the young couple to an American mail order catalog. They were delighted to leaf through the pages of thousands of items available through the mails.

The Bob Dougherty family hosted Franck Lery, a 23-year-old student from Paris here on a French government scholarship. He is studying for his Master's degree in metallurgy at the University of California in Berkeley.

Like Alain and Gisele, Franck was impressed by the bigness of things in America. "The buildings, cars, roads, and the country itself are much bigger than I expected," he said. "Everyone is so friendly and kind."

Franck hopes to see as much of the country as possible during his year's stay here, and especially wants to include factories and industries on his itinerary. He has already borrowed Bob's bicycle to tour the Livermore Area and has visited the Livermore wineries. "The Livermore white wines are excellent," he said. Franck speaks a little German in addition to English and enjoys swimming, tennis, and bridge for recreation.

A young woman architect from Paris, Genevieve Lemarchand, was the guest of Hartley Jensen and his family. She is working toward her Master's degree in architecture specializing in urban design at the University of California at Berkeley, which waived her tuition. Genevieve met many American architecture students in France and was briefed by them on what to expect when she arrived in this country.

She describes her arrival on the ship in New York harbor as mysterious and exciting. "There was a heavy mist when we arrived early in the morning and you could hardly see a thing," she said. "Suddenly, the New York skyline appeared out of nowhere. It was very impressive."

Although Genevieve doesn't like TV, she is an avid western movie fan, and sees them whenever she can. Among her observations of America, she was amazed to discover the number of household appliances and cooking aids the American woman has to ease her work.



DISNEYLAND was one of the first wonders of the new world seen by MARGUERITA Siches (center). C. P. "Mickey" Rindone (8114-4), right, and his daughter Carolyn (left), showed her the sights in Los Angeles.

Like other Europeans, she was also surprised to find that American husbands often help with the dishes and other household chores.

The guest of the Mickey Rindone family is 17-year-old Marguerita Siches of Barcelona, Spain. Her father is the manager of the Barcelona office of American Export Lines, a shipping firm. Although she has completed high school in Spain plus two years of commercial training, she will study for a year as a Senior at Livermore High School. She speaks French, Catalan, and English as well as Spanish. A few days after her arrival here, the Rindones took Margarita on a two-week vacation which included visits to Lake Tahoe and famous locations in Southern California.

Marguerita was especially delighted with Disneyland and the scenery at Lake Tahoe.

She attends school with the Rindones' daughter Carolyn, who is a Junior. In pointing out a few of the differences between the American and Spanish school systems, she noted that school is in session five

and a half days a week in Spain. Consequently, she considers Saturday as a holiday here. "Here, the pupils move from class to class in high school," she said. "In Spain, it is the teacher who moves."

So far during her stay in America she has been most impressed with the Empire State Building, which she had a chance to visit in New York, and the view of the Rocky Mountains covered with snow which she saw on her plane trip to the West Coast.

Sandia Linguist Attends Mexico City Sessions of Philosophical Congress

During his recent vacation, Marcel Weinreich (3421) attended the XIII International Philosophical Congress in Mexico City. He participated in discussions of the philosophy of science, speaking in English, Spanish, French, and Russian. The week-long conference was sponsored by the National University of Mexico.

AEC Studies Radiation Effect On Desert Animals, Plant Life

Scientists from the Laboratory of Nuclear Medicine and Radiation Biology of the University of California, Los Angeles, are preparing for the third phase of a long-range study of the effects of continuous low-level gamma radiation on desert animals and plants in their natural habitat.

The study, supported by the Atomic Energy Commission's Division of Biology and Medicine, is being conducted in a remote area of the Nevada Test Site, midway between Mercury and the Nuclear Rocket Development Station at Jackass Flats. This area, known as Rock Valley, has been subject to no significant radioactive contamination in the past and is believed unlikely to be affected in the future.

The ecological study has been underway since 1960 when a survey of animal life in Rock Valley was started. In 1962, 3500 ft. of rodent-proof fencing was erected around a circular 20-acre study area. During the past year the sample population in this area has been observed to test methods of evaluating animal populations for radiation damage.

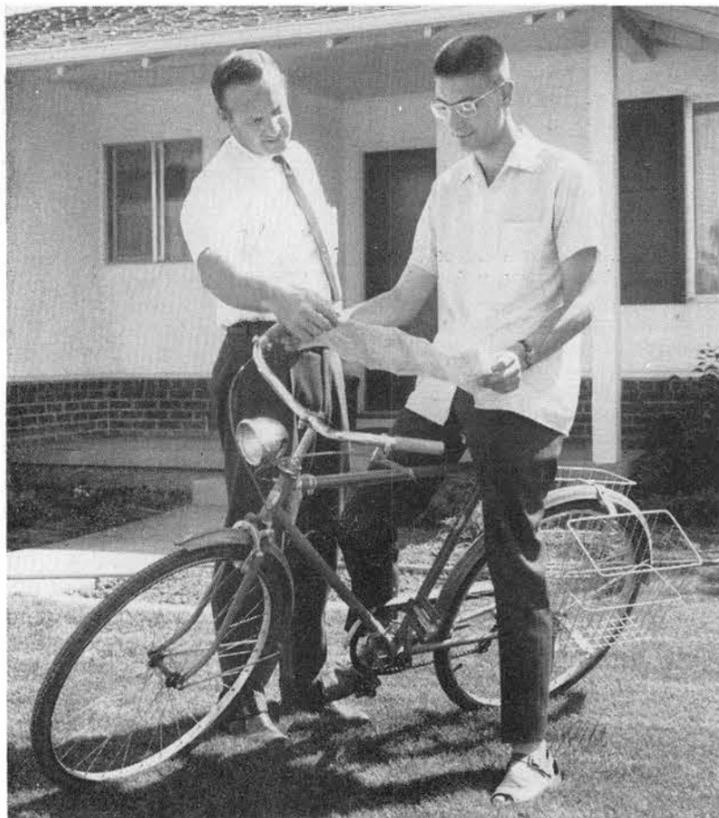
Two additional 20-acre areas now are being fenced. These experiment-

al areas will be irradiated by positioning a cesium-137 source in the center of each. The sources will be mounted on 50-ft. towers and shielded in such a manner as to provide a uniform dose rate at ground level. One area will be subjected to a radiation level of four roentgens per day. This is expected to have a detectable influence of the mammal population. The other areas will have a level of two roentgens per day in an attempt to define a lower limit of radiation exposure at which there is no damage to the mammal population. The area fenced last year will not be subjected to radiation and will serve as a control area for comparison with the irradiated plots.

The rodent population in all three areas will be studied during the same time period. Animals trapped in each area will be individually marked and censused for several generations. Studies will continue over a period of five to ten years. Mortality and fertility rates of the population in successive generations will be studied to determine how much radiation the population can tolerate when it is added to the other day-to-day hazards in the lives of the animals.



NEWLYWED COUPLE from Marseilles, France, Gisele and Alain Guiard-Marigny, right, are fascinated by the large number and variety of items available in American mail order catalog. The two were the house guests of Jay Gilson (8151-1) and his wife Barbara, left, recently.



STUDENT FROM PARIS, Franck Lery, on bike, prepares for bicycle tour around Livermore after receiving directions from Bob Dougherty (8158).



FRENCH WOMAN ARCHITECT, Genevieve Lemarchand, center, discussed some of her building sketches with Hartley Jensen (8123-1) and his wife Barbara. The Jensen's year-old-son, Dan, seems uninterested.

Supervisory Appointments

DAVE E. HENRY to supervisor of Digital Systems Division 7222, Test Range Department, effective Oct. 1.



Dave has been with Sandia nearly 11 years and has been a section supervisor for the past five years. He has been associated with the Field Testing Organization except for recent months when he headed Ground Data Handling Systems Section 7432-1 in the Aerospace Programs Organization. Dave has a BS degree in electrical engineering from the University of California, Berkeley, and did graduate study at the University of New Mexico.

Prior to attending college, he served seven years in the Air Force and has been a member of the Air National Guard since 1955.

He is a member of the Institute of Electrical and Electronics Engineers and Eta Kappa Nu, honorary society.

DAVID C. BICKEL to supervisor of Track and Guns Section 7323-1, Area III Laboratory, effective Oct. 1.



Dave has worked in environmental testing since he came to Sandia in June 1960. Previously he had been a track supervisor for the Pennsylvania Railroad.

Dave served two years in the Army Corps of Engineers.

He has both Bachelor's and Master's degrees in civil engineering from Notre Dame University, and is a member of the American Society of Civil Engineers.

LYLE E. WHELCHER to Mechanical Buyer 4361-4, Commercial Department, effective Oct. 1.



Lyle started working for Sandia six years ago as a TDSR in Systems Engineering. For the past four and a half years, he has been in the Purchasing Organization.

Prior to coming here, he was credit manager for an electronics wholesale distributor in Missoula, Mont.

Lyle has a BS degree in business administration from Montana State University and served four years in the Navy.

Welcome Newcomers

Sept. 23 - Oct. 4

Albuquerque	
Michael Drago	3427
Mary E. Goldan	2624
Janie L. Kelly	4333
Betty M. Lacher	3126
Richard C. Lindberg	2421
Virginia M. Minton	3126
Wilma M. Salisbury	3153
Robert E. Seiber	4372
Helen E. Verstynen	3126
Michigan	
John H. Walker, East Lansing	2564

Service Awards

15 Years



Arsenio P. Montoya
1312
Oct. 13, 1948



Raymond J. Gorney
4253
Oct. 13, 1948



Reynaldo Gonzales
4611
Oct. 13, 1948



Edward R. Martinez
4623
Oct. 13, 1948



Earle E. George, Jr.
2441
Oct. 14, 1948



Frederic Alexander
4133
Oct. 14, 1948



William T. Dobbins
4231
Oct. 15, 1948



Max Lopez
4575
Oct. 15, 1948



Aneida A. Pitti
1440
Oct. 18, 1948



Jarvis G. Bumgarner
2331
Oct. 18, 1948



F. N. Spaulding
4624
Oct. 18, 1948



Emilio R. Lopez
4631
Oct. 18, 1948



Walter J. Haskell
7423
Oct. 19, 1948



Manuel Sanchez
4514
Oct. 20, 1948



Davies P. Anderson
7435
Oct. 20, 1948



Harold R. Kutzley
2411
Oct. 25, 1948



Glenn E. Anderson
4252
Oct. 25, 1948



Craig Summers
2632
Oct. 26, 1948



Kenneth R. Fortman
7222
Oct. 26, 1948



Horace M. Roberson
4513
Oct. 27, 1948



CHANGEOVER to Direct Inward Dialing is explained to Ruth Peterson (3126-4543) by A/1c Jack Vandergriff and Ricardo Anzaldua, both of the Signal Corps.

Until Nov. 2, the new seven-digit numbers on telephone dials will be covered by a paper disc bearing the old five-digit extension, to be used until then.

New 7-Digit Phone Numbers To Give Added Convenience

Numbers, numbers, numbers! If the prospect of new telephone numbers throughout Sandia Laboratory (and Sandia Base) seems a nuisance, take the long-range view of the convenience the system will offer when completely in operation.

Sometime this month a member of the Base Signal Corps will come around to insert in the dial of each telephone instrument the new seven-digit number. The new number, however, will be hidden by a paper disc bearing the five-digit extension presently in use.

On Nov. 2 everyone will be asked to remove the paper disc and start using the new seven-digit number. Distribution of the Corporation telephone directory containing the new seven-digit numbers is expected to start Oct. 28 so that delivery of the directory will be completed by Nov. 1. If you end up with a number even somewhat similar to your old extension, it will be purely coincidental unless you're at Manzano Base where only the prefix "26" will be added to the old extensions. Even the new seven-digit numbers aren't as bad as they sound: the first three numbers are all "264."

On the same date (after 10:01 p.m., Nov. 1), persons calling from off base will start dialing 264-8211 to reach Sandia Base instead of the present 256-4411.

After midnight Dec. 6 things become simpler. Instead of first dialing a seven-digit number to get Sandia Base and then asking the operator for another seven-digit number to reach a specific person or office, only the new seven-digit number (which replaced five-digit extensions) is dialed. The Base number, 264-8211, will be used primarily for "information."

For example, here is how to reach the Lab News office during the period of change:

If calling from within Sandia Base: until 10:01 p.m., Nov. 1, dial 54241; after that date, dial 264-7841.

If calling from off-base Albuquerque: until 10:01 p.m., Nov. 1, dial 256-4411 and ask the operator for 54241; Nov. 2-midnight Dec. 6, dial 256-4411 or 264-8211 (new Base number) and ask the operator for 264-7841; after Dec. 6, dial only 264-7841.

The procedure for dialing Albuquerque numbers from Sandia Base will remain the same (dial "9"). Long distance will be reached by dialing "6" until Dec. 6 when employees will dial "9" (for outside) then "0" (for operator) in making person-to-person long distance calls, or "9" and "112" (for DDD circuit) for dialing station-to-station long distance calls. There is no change in making tie-line calls.

For additional information see Sandia Laboratory Employee Bulletin Vol. 15, No. 33. Extra copies are available from Section 4542-3.

Nuclear Test Ban Treaty Does Not Change SNAP, Rover, Pluto Programs

The approval of the nuclear test ban treaty has prompted some inquiries concerning the effects of the treaty on the SNAP, Rover, and Pluto programs. In answer to these inquiries the AEC has pointed out the following:

"The Treaty bans, under Article I, 'any nuclear weapon test explosion, or any other nuclear explosion at any place' within the jurisdiction or control of a participating nation, excepting underground tests. The SNAP, Rover, and Pluto programs do not involve nuclear explosions and therefore are not affected by the treaty. These nuclear systems, as you may know, are being developed to provide propulsion and auxiliary power sources for aerospace applications.

"Aerospace nuclear propulsion and auxiliary power systems are operated under stable, carefully controlled conditions and are designed to avoid the release of significant amounts of radioactivity into the atmosphere. To insure the

Sandia-Written Papers To Be Presented Before Physical Society

Five technical papers written by Sandia Laboratory employees will be presented at the American Physical Society meeting to be held Oct. 18-19 in Chicago.

Included are "Fine Structure in Alkali Halide Color Center Bands" by C. B. Pierce (5151); "Influence of Crystal Growth Rate on Radiation Induced Defects in Synthetic Crystalline Quartz" by G. W. Arnold (5311); and "Oxygen-Defect Complexes in Irradiated Germanium" by Ruth E. Whan (5311).

"Electrical Resistance of Germanium during Shock Loading," written by R. A. Graham (5133), J. R. Holland (5135), O. E. Jones (5133), and W. J. Halpin (5133), will be presented by Mr. Graham.

F. M. Smits (5310) will present a paper entitled "Search for a Rate Dependence of Neutron Displacement Damage in Silicon." J. D. Moore (7418) is the co-author.

adequacy of design of nuclear systems for aerospace applications, the Commission supports, at an annual level of about \$15 million, an aerospace nuclear safety research and test program and, prior to approval for use, thoroughly reviews the nuclear safety aspects of the systems and their potential effects on man's environment."

E. S. Roth to Attend Standards Association Subgroup Sessions

E. S. Roth (2564-1) will be in New York City Oct. 14-17 attending the American Standards Association B89.3 Roundnends Subgroup meeting. Mr. Roth, who is also chairman of the ASA B89.3 Metrology Subgroup on Datum Deformation, Concentricity, and Parallelism, will hold the first meeting of this group to prepare a draft of a new Federal Standard on the subject.

Italian, Russian Scientists First to Define Molecule

The molecule as we know it—the smallest part of any substance as it normally exists—wasn't distinguished as such in the atomic theories of John Dalton, J. J. Berzelius, or other early investigators. The currently-accepted concept of the molecule evolved separately, and in this issue, we will examine some of the work of two scientists, Amedeo Avogadro, an Italian; and D. I. Mendeleev, a Russian, both of whom made major contributions in defining the molecule (Avogadro), and in showing the relationship between the elements (Mendeleev).

In the early days of theorizing about the atom, no clear differences were distinguished between the atom and the molecule; Dalton, for example, used the term **molecule** as a synonym for his "ultimate particle" or atom. The Italian physicist Amedeo Avogadro, on the other hand, used **molecule** to refer to several different particles. On the basis of his writings, he seems to have been aware of distinguishing characteristics of three types of molecules. He referred to atoms of elements as **molecules elementaires** (elementary molecules), and to molecules of elements as **molecules constituantes** (constituent molecules). The molecules of compounds he termed **molecules integrantes** (integrating molecules). And he provided science with a means of determining the relative masses of molecules of gases.

Avogadro, who lived in Turin, Italy, from 1776 to his death in 1856, was a professor of higher physics at the University of Turin. As a physicist, he was especially interested in the constituency of gases, and much of his research was conducted in this area. He theorized that under the same conditions of temperature and pressure, equal volumes of different gases contain equal numbers of molecules. Dalton, in 1808, had considered this possibility but rejected it, perhaps because of the confusion existing in his concepts of atoms and molecules.

Density Definition

The density of a gas is defined as the weight of a given volume—say, one liter—and hence is equal to the weight of the molecules

contained in that volume. But, since for different gases this definite volume always includes the same number of molecules, it follows that the density of a gas is directly proportional to the weight of its individual molecules.

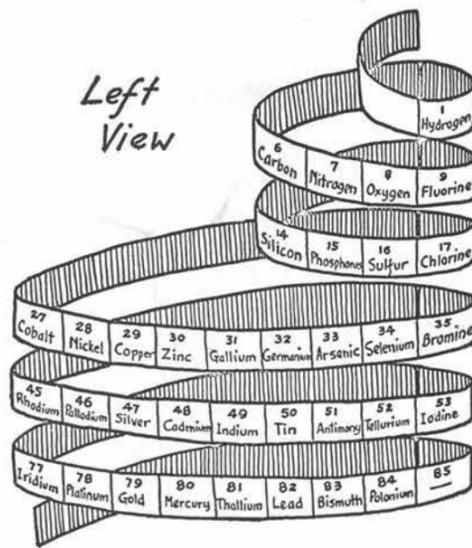
As Avogadro put it: "Setting out from this hypothesis, it is apparent that we have the means of determining very easily the relative masses of the molecules of substances obtainable in the gaseous state . . . for the ratios of the masses of the molecules are then the same as those of the densities of the different gases at equal temperature and pressure."

In a different sense, a molecule may be seen as a single atom or as an aggregate of atoms held together by forces—called valence forces—and acting as a unit. This definition provides a means by which the concept of the molecule can be applied to materials in the solid state.

Solid naphthalene, for example, is made up of identical aggregates, each composed of ten carbon and eight hydrogen atoms. In each aggregate, each atom is close to, and evidently relatively strongly bonded to at least one other atom of the same aggregate, but no two atoms in different aggregates are comparably close to one another. These aggregates are evidently identical with individual molecules.

Larger Molecules

Some substances such as proteins consist of much larger molecules, some of which can be "seen" by means of the electron microscope. However, these are extreme



THE 92 ELEMENTS have been arranged in size places on a ribbon, and coiled in a helix. As a result, ele-

ments with similar properties fall one under the other vertically. Illustration shows two-sided view.

cases; ordinarily, molecules are much too small for such observation.

As early as 1830, scientists had called attention to a simple relationship among the atomic weights of elements having similar properties. In 1862, a Frenchman, B. de Chancourtois, had arranged the elements, in order of increasing atomic weight, in the form of a spiral or screw. He then found that elements with similar properties occupied related positions on the spiral.

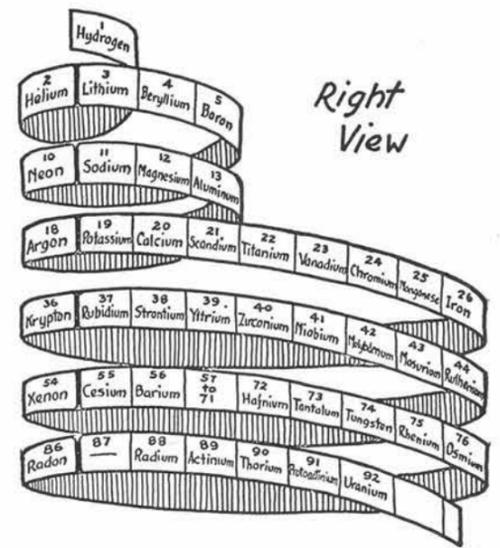
In 1869, the Russian scientist D. I. Mendeleev published a short note concerning the relationship between elemental properties and atomic weights, which he subsequently lengthened in a paper published in 1871: "The Periodic Regularities of the Chemical Elements."

It was apparent to Mendeleev, in the period from 1860-1870, "that relations between atomic weights of analogous elements were governed by some general and simple law . . . When I arranged the elements according to

the magnitude of their atomic weights, beginning with the smallest, it became evident that there exists a kind of periodicity in their properties. I designate by the name periodic law the mutual relations between the properties of the elements and their atomic weights these relations are applicable to all the elements and have the nature of a periodic function."

Mendeleev emphasized the repetition of physical and chemical properties at definite intervals in his "periodic table." Where the periodic properties appeared to break down, he predicted that in some instances the accepted atomic weights were erroneous, while in others, allowances for undiscovered elements would be necessary. The discovery of gallium in 1875, scandium in 1879, and germanium in 1886, affirmed Mendeleev's brilliant predictions.

Although certain functions of his periodic classification have been modified, the fundamental features of his law remain unchanged and are now accepted as cardinal truths of nature.



ments with similar properties fall one under the other vertically. Illustration shows two-sided view.

Sandia Authors

Current or forthcoming articles by Sandia authors in technical journals include the following:

B. H. Anderson (1112), "Rigid Foam Structures for Shock Protection of Electronic Sub-Assemblies," September issue, **Electrotechnology Magazine**.

I. Ortega (1122) and J. D. Cyrus (1332), "Chromatographic Liquid Leak Detection," October issue, **Analytical Chemistry**.

W. J. Zimmer (1442), "Variables Sampling Plans Based on Non-Normal Populations," July issue, **Industrial Quality Control**.

D. C. Wallace (5151), "Anharmonic Free Energy of Crystals at High Temperatures," September issue, **Physical Review**.

E. S. Roth (2564), "Functional Gaging with a Coordinate Inspection Machine," September issue, **The Tool and Manufacturing Engineer**.

R. L. Schwoebel (5152), "Oxide Formation on Magnesium Single Crystals: I. Kinetics of Growth; II. Structure and Orientation," September issue, **Journal of Applied Physics**.

R. R. Davies (4332-2), "Surveys Keep Vendors on Their Toes," Sept. 9 issue, **Purchasing**.

Albert Narath (5151), "The Low Temperature Sublattice Magnetization of Antiferromagnetic CrCl₃," Sept. 1 issue, **Physical Review**.

G. W. McClure (5152), "Charge Exchange and Dissociation of H⁺, H₂⁺, and H₃⁺ Ions Incident on H₂ Gas," June issue, **Physical Review**; and "Low Pressure Glow Discharge," June 15 issue, **Applied Physics Letters**.

D. M. Mattox and John McDonald (both 1124), "Interface Formation During Thin Film Deposition," August issue, **Journal of Applied Physics**.

D. M. Mattox and R. C. Heckman (both 1124), "Electrical Properties of Single Crystal Bismuth Trisulfide," July issue, **Physics and Chemistry of Solids**.

C. J. MacCallum (5411), "On Kinetic Integral Solutions of the Boltzmann Equation," Oct. 15 issue, **Physical Review**.

H. M. Lohse (7223), "Etching of Micro-Fine Patterns in Nylon Photopolymer," August-September issue, **Society of Photographic Engineers and Scientists**.

G. J. Hof (2564), "Earth Vibrations—How they Affect Measurements," August issue, **Tool and Manufacturing Engineer**.

J. E. Smith (formerly 1113) "Tension Tests of Metals at Strain Rates up to 200 Sec.⁻¹," September issue, **Materials Research And Standards, ASTM**. (Paper based on work done at Sandia.)



WATCHING A DEMONSTRATION of a parts list compilation on the IBM 1403 printer in the Data Processing Section 8231-3 during a recent tour and briefing at Livermore Laboratory were two members of Sandia Corporation's Board of Directors: L. Ray Cook (second from left), Vice

President, Engineering, Western Electric Company, and Harvey G. Mehlhouse (center), Vice President, Personnel and Public Relations, Western Electric Company. Explaining the operation: Jerry Jones (8161), left, and Gordon Bjork (8231), right. B. S. Biggs (8000) accompanied guests.

Zapraszamy Wszystkich Na Polski Obiad i Taniec

Ever get a real yen for "golabki" (stuffed cabbage), "ponczki" (filled pastry), or "polska kielbasa" (Polish sausage)?

Those dishes and other home-cooked Polish specialties will be available on Saturday, Oct. 26, when the Polonaise Society holds its annual dinner dance. The event will be held at the FOP Hall on the U.S. 422 frontage road just south of the San Mateo cutoff. You don't have to be Polish to attend, but polka-dancers are preferred. Joe Stark and his musicians will provide the lively tunes.

Ted Stetz (5133), club treasurer, said there usually is singing and some members wear Polish costumes. "I know my eight-year-old daughter will be wearing a native costume my mother bought her during a recent trip to Poland—her first visit in 50 years," Ted said. Other Sandians who are active in the Polonaise Society are Helen Agats (4233), former president, Barbara Ruminski (3460), Joseph A. Ozmina (4632), and J. J. Michnovicz (3465). Any of them may be contacted for tickets to the dinner dance.

The Society has several purposes: to maintain the noble traditions and culture of the Polish people; to further an interest in Polish history, art, language, songs and dances; to provide a close knowledge of the accomplishment of Polish patriots and pioneers in the United States; and to offer aid and hospitality to all newcomers in Albuquerque of Polish birth or extraction.

Other activities during the year include a Christmas party for the children, a summer picnic, and frequent potluck dinners.

Sandia Scouters Turn Out in Big Numbers For Fall Camporee

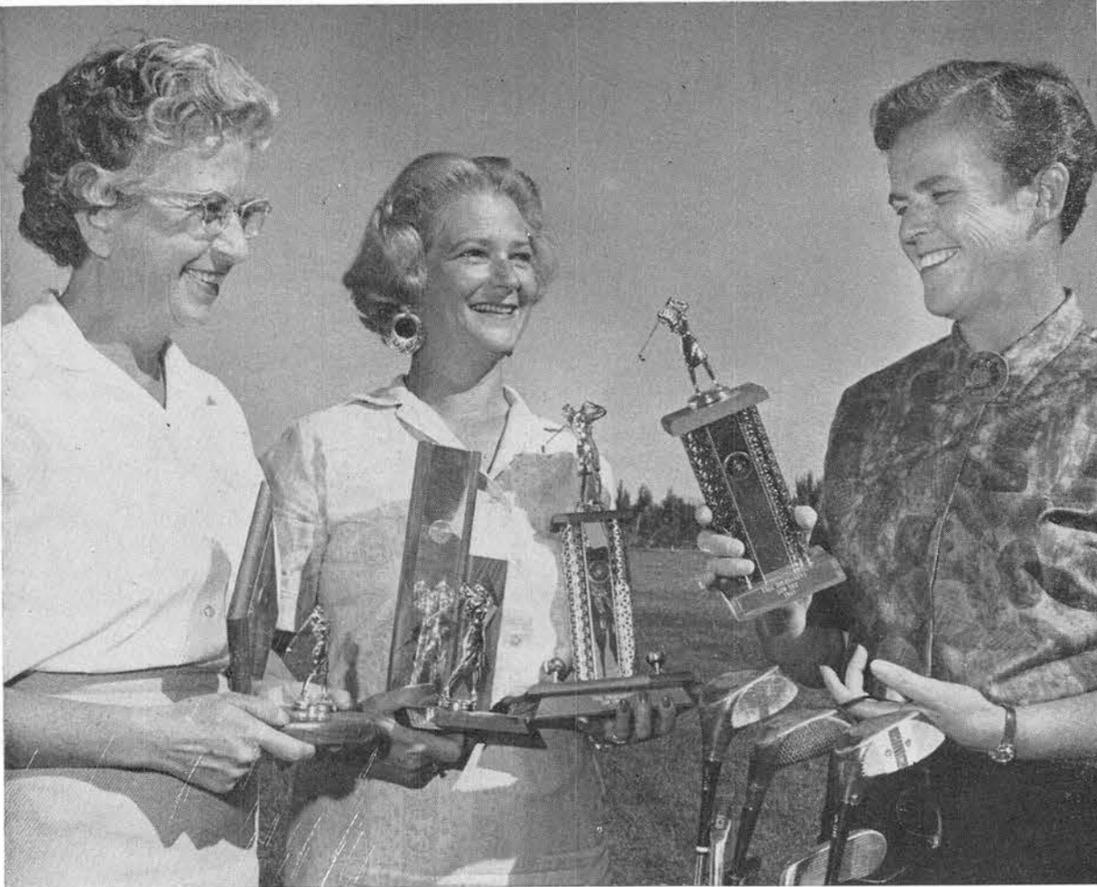
Some 27 Sandians participated in the Fall Camporee of the Sandia District, Kit Carson Council, Boy Scouts of America, which was held Sept. 6-8 at the Paliza Organization Campground in the Jemez Mountains.

Theme of the Camporee was "Development of the Patrol Method and Training in Scout and Campcraft Skills." Twenty scout troops, comprising 408 scouts and explorers, and 104 adult leaders, participated.

Sandia employees who attended the event include R. R. Bewley (4254-6); E. L. Bolton (4332); T. M. Bazone, Jr. (7521-2); R. E. Brain (2633-2); R. D. Brooks (2331-1), Chairman, Sandia District; E. E. Chestor (7522-1); R. I. Couzin (4233-4); W. J. Dalby (7412-1);

E. B. Frame (7521-3); F. A. Gross, Jr. (9130); R. D. Harwood (7523-2); G. W. Hughes (7224-2); C. E. Katzenberger (3452); J. A. Kenagy (4224); J. R. Lyle (2624-2); R. H. Opperman (1413-2); J. J. Ridinger (7521-1); W. R. Rosenberg (4360); F. H. Schneider (4361-4); E. F. Schroeder (1431-2);

W. E. Scott (4431-1); H. R. Shelton (3132-1); R. W. Whitson (7521-1); H. M. Willis (3240); E. W. Wolfe (225-1); D. L. Vath (7523-1); and M. A. Young (7523-2).



BARBARA HARWI (3126), center, took the low gross crown of two recent tournaments of the Sandia Laboratory Women's Golf Association. Dorothy Hummer (4333), left, took low net honors at the Short Nine Los Altos tourney Sept. 28. Evelyn Schultz (4323), right, took low net at recent Long Nine Tourney.

Sympathy

To Donald J. Sullivan (4514-3) for the death of his father-in-law in Illinois on Sept. 18.

To Lorraine Torres (3421-1) for the death of her brother in Glendale, Calif., on Sept. 13.

To Joseph C. Wynn (4514-2) for the death of his sister in Oklahoma on Sept. 28.

To E. A. Krahling (4232-4) for the death of his brother in Cincinnati, O., on Sept. 30.

Sandia Sports Car Team Wins First 425-Mile Event

K. D. Nokes and J. M. Phillips (both 2451-1), his navigator, won first prize in the Rolling High Rally, a 425 mile sports car event, held in southern New Mexico last week-end.

The rally was sponsored by the Pan American Club of the Sports Car Club of America and attracted 23 cars.

Standings Flag Football

Team	Won	Lost
11, 4200, AEC	4	1
7300	3	2
13, 14, 15, 2400	2	3
25, 44, 7500	2	3
31, 72, 7400	2	3
34, 51, 46, 26, 53,		
41, 43, 2300	2	3

SHOPPING CENTER

CLASSIFIED ADVERTISING
Deadline: Friday noon prior to week of publication unless changed by holiday.
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

FOR SALE

10 ACRES wooded, on country road, borders south 66, \$2500. Ray, AX 9-1330.
TWO-STORY MOUNTAIN CABIN, furnished, on 3/4 acre, half down, finance balance, or 25 per cent discount cash. Kerstetter, AX 9-3766.
BABY CRIB, w/springs and mattress. Cook, AX 9-7509.
12V Ford voltage regulator, \$2; 15' chrome wheel covers, \$7.50 (4); Brunswick bowling bag, red and white, \$2. Trybil, 298-3325.
'58 RANCHERO, \$600, will take older car as trade-in. Little, 298-6462.
3-BDR., 1 1/2 bath, walled, a/c, carpet, 85x120' lot, 3404 Cherez Road, NE, \$10,900. Smith, AX 8-0767.
'61 RENAULT DAUPHINE, 25,000 miles. Baltzell, 242-4937.
'58 FRIGIDAIRE electric range, \$80. Pfeifer, 299-4650.
MOTORCYCLE, Triumph Tiger Cub, 1960, \$350. Officer, AL 5-6089.
GE 40" RANGE, \$85 or best offer. Burnside, 268-1755.
3-BDR., 1 1/2 bath, patio, landscaped, near Winrock, schools, bases, \$13,000, \$400 down, approx. \$97/mo. including taxes and ins. Devers, 6709 Zimmerman NE, AL 6-0835.
HOTPOINT REFRIGERATOR, 9.6', \$35; 30-gal. electric hotwater heater, \$30; registered 3/4 Arabian mare in foal. Galbreath, 344-7263.
20" GIRL's Schwinn bicycle w/basket, \$18; 1953 American Peoples encyclopedia, \$30. Calkins, DI 4-5914.
APPROX. 1/2 acre level lot in Glenwood Hills, make offer on down and assume \$36.90 monthly. Hopper, DI 4-7985.
8 MM KEYSTONE movie camera w/leather carrying case and bar light attachment, complete, \$15. Newton, 265-1042.
GO CART, Clinton "hot 65" engine, \$85; 21" TV, \$40; 3/4 horsepower motor, \$15. Kraft, AX 9-2157.
WASHER, ABC O'Matic, \$25. Leighton, 268-4927.
'62 VW MICROBUS Deluxe, \$2095; '55 Chevrolet 1 1/2-ton truck w/1000 gal. water tank mounted, \$850. Norton, BU 2-3165.
SELL OR TRADE: 2 bdr block house on 2 1/2 acres, assume credit union loan, 12 miles east of Western Skies. Brooks, 282-3184.
HEATHKIT monaural amplifier, Garrard RC80M changer, R-J enclosure w/12" speaker, \$75. Reed, AX 9-7425.

PET RACCOON, 3 months old, \$15. Cope, 298-1674.
VOLKSWAGEN CAMPER, '62, fully equipped. Miller, 298-1994.
ONE SET BUNK BEDS, complete, \$30; 1 1/2 yr. old. Easy combination washer dryer, \$200 or best offer. Orth, 298-6229.
WELBUILT GAS RANGE, used 1 yr. Hunter, 298-2103 after 5 p.m.
SEAR's electric heater, thermostat control, 1650 watts, used 5 hrs., cost \$21.95, sell for \$12.50; 7-20x15 Ford wheel and tire, \$6.50 Asturias, 299-4173.
MEN's ski boots, size 9 1/2; 6' skis w/safety bindings; snow tires, tubes, rims, 6.40x15; wedding dress, size 7-8. Stirbis, 299-5363.
30" WESTINGHOUSE electric range, 2 yrs. old, \$75. Hanson, 298-0637.
6' x 9' brown tweed rug, non-skid back, \$5; 7-10x15 Goodrich snow tire, \$5. Post, AX 8-0481.
TAYLOR NAVIGATOR COMPASS for car or boat, \$3.50. Barnett, AL 5-7465.
RUG, 13x17, brown tweed, \$25. Hudson, 298-6037.
'63 1/2-ton 3-speed GMC, no-spin rear end, extras, 4300 miles, w/small camper, \$2600 cash; 3" Tasco 60-600 power telescope, \$125. Bruington, 255-6164 after 5 p.m.
BABY SCALE, Detecto, \$7; Magic Chef gas range and oven, \$50. Kotoski, AX 8-1732.
ARGUS C3 35mm camera w/flash attachment and GE PRLI lightmeter, both for \$25; No's. 1, 2, and 3 woods, Wilson, Billy Maxwell autograph, reminder grip, \$18. Dauphinee, AL 5-6367.
CAMPER, not overcab, 8' box 1960-64 Chev. or GMC pickup, insulated vent in top, 110 & 12 volt w/lights and outlets, R speaker and cove cabinet, \$375. Ferketich, AM 8-4472.
B-FLAT CORNET, Alexander, \$65. Thomas, AM 8-1948.
HAM STATION, HQ110 receiver, DX-40 transmitter, VFD, microphone, amt. relay, cables, and misc., \$250. Bodhaine, 298-1566.
GERMAN LUGER, \$75; new Savage hunting rifle, \$85; Ruger single six, \$50; will trade. Smitha, AX 9-1096.
COMBINATION RIFLE/Shotgun .22 Magnum and 20 ga. Magnum. Krenz, 298-0619.
3-BDR., a/c, walled yard, gates, carpets, new paint inside and out, landscaped, \$84/month. Hawn, AX 9-7835.
250-GALLON butane tank, used six months, \$150. Bryan, 877-0177.
REMINGTON TYPEWRITER, portable "Quiet Riter," w/case. Pitti, AL 6-1629 after 5 p.m.
FOUR used tires, 6.70x15, \$15. Montano, DI 4-3797.
SINGER SPARTON portable sewing machine, without case, \$20. Etherton, 344-5834.
'57 150D LAMBRETTA motor scooter. Mathias, AL 5-0156.
21" TV, Hi-Fi record player and radio three-way combination, cost \$400, sell for \$125. Abegg, 298-2498.
SNOW TIRES, 7.60x15, almost bald, good for spares or recapping, all five for \$10. Anderson, 256-7394.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, Oct. 18

RMQ Viking tape deck w/two RP 62 record/playback pre-amplifiers and cabinet, \$195. Warnke, 268-1877.
SELL OR TRADE: Heathkit Apache BC-348-O receiver and surplus gear. Dobias, 256-7476.
GIRL's 24" bicycle, \$7.50; bassinet w/mattress, liner, \$4; playpen, \$4; Teeter Babe, \$2; Tot-Totter, \$2; Mouton coat, size 12-14, \$10; TV antenna, \$1. Crompton, AX 9-5569.
'61 MUSTANG MOTORCYCLE, buddy seat, chromed wheels, big engine, Thoroughbred model. Montoya, AM 8-5675.
HOTPOINT AUTO. WASHER, \$65; Hotpoint Auto Dryer, \$55; Admiral TV, 21", \$25; multi element TV antenna, \$5. Shuster, AM 8-8491.
HERTER'S 14' fibre glass fishing boat, tilting trailer, 7 1/2 HP Elgin motor. Hackman, 298-1028 evenings or week-ends.
'58 PLYMOUTH Custom Suburban station wagon, 4-dr., V-8, Automatic transmission, PS, R&H, tinted glass, w/5 tires, \$650; Pride baby bathinette, \$5. Duliere, 298-1992.
'55 PONTIAC 2-dr. HT, R&H, w/w, \$350. Wilson, AX 8-0049.
JET PUMP, rebuilt w/90' jet, 3' tail pipe and foot valve. Johnson, BU 2-3240.
500 GALLON butane tank, \$225; electric stove; outside door steel window; venetian blinds; GE and Sunbeam irons, make offer. Riggs, DI 4-2791 after 5 p.m.
'60 FORD GALAXIE, V-8, 2-dr., R&H, standard trans. w/OD, \$1145. Swanson, 298-0425.
SOFA BED, beige naughahide, front opening, \$95; '57 Kenmore automatic washer, \$40; dinette set, beige, upholstered chairs, \$20. Petrone, 255-3633.
NEW 8 MM Revere movie camera w/tri-zoom lens, automatic or manual, cost \$225, sell for \$100. White, AL 6-3077.
BABY CRIB and mattress, large size, blond finish, \$18. Southern, AL 6-7371.
ROLLAWAY BED w/36" mattress, \$15. Burns, CH 2-2407 after 5 p.m. or week-ends.
HEATHKIT preamplifier and amplifier, \$35; '53 FORD TUDOR, \$250. Johnson, 255-5427.
AKK Weimaraner pups, 7 weeks old. Fimple, AX 9-4703.
WATCHMAKERS STAKING SET, K and D 600 series, includes 80 punches and 20 stamps; tape recorder w/dual speakers, 10 watt outlet. Iverson, 298-1936.
3-BDR HOME near Fatima, den, fireplace, 1 1/2 baths, immed. poss. low down, \$134/mo. or refinance. O'Neil, 332 Fontana Pl. NE, AM 5-0877.
'59 CHEVROLET 2-dr., 6-cyl., std. shift, w/w tires, heater, \$825. Smith, 1212 Cardenas NE, AL 5-4371.
'49 JEEPSTER, \$300; '63 Mina bike, \$125. Bookwalter, AM 8-3915.

.303 Br. Cal. semi-sportorized rifle, \$15; 7.62 cal. Russian rifle, \$6. includes 20 rounds of 7.62 ammo. Wersonick, 298-7012.
SPORTSLINER CANOPY CAMPER, \$215; Knight KB-85 and KP-50 stereo amplifier and preamplifier, \$69; Eico HFT-90 FM tuner, \$25. Davis, 242-5175.
SWING SET, heavy duty; miniature pool table. Calvery, 255-9545.
CHEST, Mr. and Mrs. type, pine wood, light maple varnish finish, \$20 or best offer. Duvall, 299-8744.
'63 THUNDERBIRD, fully equipped, 14,000 miles, \$3975. Buchanan, CH 2-5066.
'51 CADILLAC, \$150 or 1957 Cadillac Fleetwood, all power and air, \$850. Russell, 2820 Vermont NE, AX 9-0159.
'60 BUICK ELECTRA, one owner, power and air, can be seen at 3408 Palomas Dr. NE, 22,000 miles. Coberly.
FREE KITTENS, black, grey or mixed, 10 weeks old, weaned, housebroken. Swain, 265-0098.
'62 TR3-A heater, Tonneau cover, adjustable steering wheel, low mileage, \$1500. Rowley, 265-4622 after Sunday.
VESPA MOTOR SCOOTER, \$85. Coalson, BU 2-3208.
'54 CHEVROLET 2-dr., autom., 2 new tires, \$300 or best offer. Bryant, 268-3116 after 5:30 p.m.
'57 FORD Del Rio Ranch Wagon, R&H, Fordomatic, Thunderbird engine, \$500. Holt, 255-1426.
BAUM-MARTEN four skinned fur scarf, \$80; 4 1/2" vise, \$10. Klecotka, AX 9-8198.
3-BDR 1 1/2 bath, a/c, 220 outlet-kitchen and garage, landscaped, newly decorated, draped throughout, priced at appraisal. Kennedy, 2912 Aliso Dr. NE, 268-6063.
3-BDR., 1 1/2 bath, den, Dining room, hw/floors, pitched roof, 2 fireplaces, a/c, wall, near Grant Los Altos school, FHA \$16,250. Maciolek, 299-1696.
AIR COMPRESSOR: 70 feet wire border fencing, 22" high; ski belts; boat cushions. Chadwick, 298-1298.
BOY'S BICYCLE, 26" Western Flyer, \$15; 16" beginners sidewalk bicycle, \$4.50. Summers, AX 9-4674.
WOODED MTN. LOT, 1.11 acres, club privileges, 30 miles from city, free water nearby, many cabins in area. Hoice, AX 9-3365.
COMPONENT STEREO, separate matched amplifiers, \$75; Chippendale couch, \$50; chest of drawers, \$20; trade for power tools. Butler, AX 9-5626.
12" KARSLON SPEAKER ENCLOSURE, unfinished birch w/Knight 3-way speaker, \$45; 15" Karson enclosure, unfinished pine w/12" speaker, \$20. Taylor, AX 9-5416.
'58 FORD FAIRLANE V-8 4-dr. sedan, Fordomatic, \$525. O'Neil, AL 5-6355.
SELL OR TRADE: two living room table lamps and corner table. Lucero, 268-1848.
'57 CHEVROLET V-8 4-dr., standard shift, requires light mechanical work, first offer over \$400. Tatrova, 840 Loma Hermosa Dr. NW, 243-7277.
'49 PONTIAC, 8 cyl. club coupe, R&H, everthing operates. Mauldin, 298-3164 after 6 p.m.

COMPLETE BROWNIE uniform, dress size 10, \$4. Wladika, AL 5-9166.
'57 FORD Fairlane 500 (HT coupe), 312" engine, PS, Fordomatic, Radio, padded dash, make offer. Chavez, AX 9-5102.
'60 MERCEDES BENZ 220SE. Matthews, 242-6285.
JEEP PICKUP CAMPER, 4-wheel-drive, Ford engine alternator, FWD, new paint, 6 tires. Geilenfeldt, AL 6-7357.
BABY BED, \$15; gas range, full size, \$10. Smith, 299-9187.
DOUBLE LAUNDRY TUBS: vitreous china (not concrete) w/stand, \$20. Elliott, AL 6-7909.
CHEST OF DRAWERS, end tables, coffee table, occasional chairs, electric roaster and misc. items. Hesselbarth, 256-1720.
PARTS CLEANING MACHINE circulating pump, two controls 36"x18"x18", \$40; air compressor 1/2 HP, 30 psi, 20 gal. tank, \$95. Disch, AX 9-1201.
BABY BED, car seat, high chair, infant seat, bathinette, bassinet. Earlywine, 299-2835 after 5:30 p.m.

WANTED

TO JOIN CAR POOL from vicinity of Morningside NE and Goodrich NE to bldg. 880. Heidrich, 345-1472.
HOMES for three kittens, house broken and weaned. Smeltzer, AL 6-3908.
ONE USED 8", 9" or 10" table saw w/stand and motor, in good condition. Beach, AL 6-6165 after 5 p.m.
RIDER, San Pedro and Constitution to Gate 3. Reich, 268-7968.
USED FOOT LOCKER in good condition. Whitcomb, AL 6-0577.
26" BOY'S bicycle. Baxter, DI 4-7601.
RIDE, Lomas and Monroe NE or Constitution and Monroe NE to bldg. 880. Phillips, 255-0143.
SIGMA AIRCRAFT CLUB has three memberships open on Taylorcraft. Hedberg, AX 9-6359 or Risse, AX 9-5002.
RIDERS from vicinity of Indian School Rd. and Rio Grande Blvd. NW to 802 parking lot. Stark, CH 3-3110.
YOUTH BED in good condition. Matlack, AL 6-7371.
1957 THUNDERBIRD. Colp, AM 8-8035.
RIDE from vicinity of Hoffmantown, 2114 Hendola NE. Minton, 299-0312.
USED PIANO, console preferred. Smith, AX 9-8133.
5.60x15 TIRES, prefer snow tread; shop manual for TR-4 and '58 Hillman Husky series II. Svensson, DI 4-7700.

FOR RENT

2-BDR. HOUSE, newly decorated, ceramic bath, built-in range, near Fatima, water and garbage paid. Norvill, 5000 Sunningdale, NE, 255-2787.
MODERN FURNISHED, insulated Sandia Mt. cottage, suitable for 1 or 2, 25 min. from base, water and heat paid, carpet, \$45/mo. McMillin, BU 2-3226.
FURNISHED, clean, 1 bdr. apt., large closet and cabinets, couple, no pets. Lawrence, 304 Wyoming NE.
3-BDR., 1 1/2 bath, built-in kitchen, landscaped, a/c, fenced yard, carpeted, \$90/mo. Simon, DI 4-4465.

Fire Prevention Week Ends But Effort Must Continue

National Fire Prevention Week is being observed at Sandia Laboratory Oct. 6-12 with posters, displays, fire drills, inspections, and demonstrations coordinated by Sandia's fire prevention team—T. A. Rosenwald, W. L. Smith, and R. W. Cohrs (all 4542-1).

While wrapping up the week's activities, the team pointed out that fire prevention is a year around job, emphasized during the week that includes the anniversary of the Great Chicago Fire of 1871.

"Fire prevention is a constant concern," Ted Rosenwald says. "Sandia Laboratory's fire loss of \$607 since the first of the year shows that it can happen here. Luckily, four small fires were extinguished quickly and did not spread."

Fire killed 11,700 Americans last year. Fire damage to property will reach \$1,690,000,000 in 1963.

"A constant hazard at Sandia Laboratory," Ted says, "is our use of flammable liquids. Of necessity, these are used in areas throughout the Laboratory, and constitute the single most dangerous item

around."

Flammable liquids include items such as alcohol, methyl ethyl ketone, acetone, toluene, kerosene, gasoline, and lacquers. Except in a few instances, these liquids should be stored in and dispensed from approved safety cans. Where purity is a factor, stainless steel safety cans are available. Smoking and open lights are prohibited in any area where flammable liquids are used.

"Occasionally, it is necessary to machine pyrophoric metals such as magnesium and lithium," Ted says. "Extreme care must be exercised when performing any machining operation which involves pyrophoric metals."

The use of pressurized spray cans containing paint, insulating material, and clear coatings is widespread at Sandia Laboratory. In many cases, these spray cans contain flammable liquids. "Never use a pressurized spray can while smoking or near an open flame," Ted says.

Ted points out that some adhesive materials are flammable, and smoking, open flame, or uncovered lights will ignite the material.

"Remember that good housekeeping is the essence of fire prevention," Ted says. "A clean laboratory, shop, or office seldom burns. Your fire prevention team is here at all times to help you prevent fires. Call us at ext. 29263 or 26259."

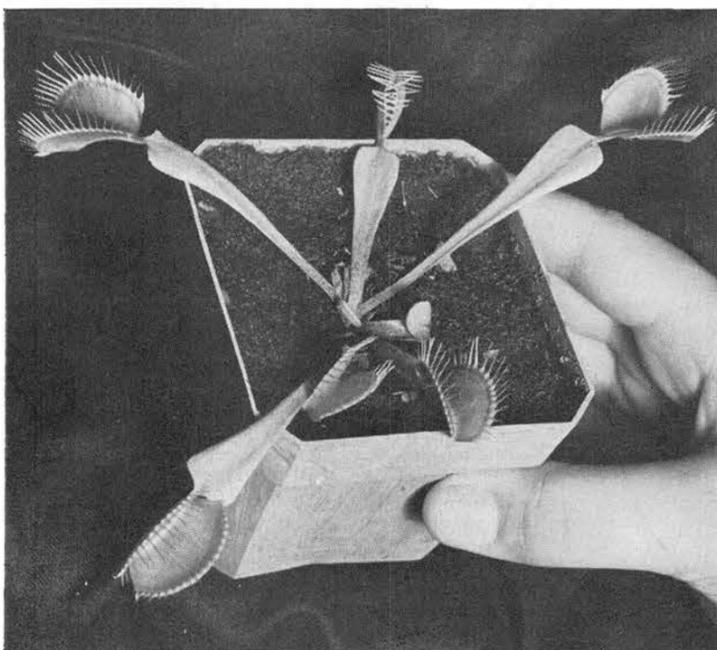


MESSAGE of Fire Prevention Week is highlighted in this display—11,700 lives lost and property damage of \$1,690,000,000 as a result of fires. Examining

the board is Sandia Laboratory's fire prevention team (from left), R. W. Cohrs, T. A. Rosenwald, and W. L. Smith (all 4542) who conduct a year-around program.

It began with Venus . . .

He Had A Greenhouse So He Grew Orchids



THE CAUSE OF IT ALL—A Venus Flytrap lead Dick Hodges into becoming an orchid fancier. The vicious little plant is shown at work. Trap at top center is closed. Spikes prevent insects' escape. After initial triggering, the trap will further tighten and the plant fluids will digest the insects.

A fellow named Jack traded a cow for a handful of beans. They grew into a mighty beanstalk and eventually Jack became a giant killer.

A Sandian named Richard E. Hodges (3462) received three seeds as a Christmas present. They grew into rare Venus fly-trap plants and launched him into the hobby of growing orchids.

Dick's story is hardly the stuff from which legends are made, for there are not many giants left nowadays. In the meantime, a Venus flytrap is an exotic thing and very rare. The color is a pale green and instead of flowers, those "blossoms" are really spiked traps which are triggered when an unsuspecting insect lands on the surface. Wham! The trap snaps shut and the insect is slowly dissolved by the fluids of the plant. If it is a little insect, the trap will reopen in a few days. If it is a big bug, the trap digests it and then turns brown and falls off. It will be replaced later by the well-nourished plant.

This could be handy around the house in the summer time so why

aren't there more Venus flytraps and less flies?

"In the first place," Dick says, "the plant has to have an environment where the humidity stays around 50 per cent and the temperature ranges between 65 and 100 degrees Fahrenheit."

Dick started his three seeds in a converted glass fish aquarium containing peat moss. After five days, he found growing things.

"Weeds," he says. "It took two weeks for the flytraps to sprout and I wasn't sure for a long time which was which."

Eventually the plants outgrew the aquarium and Dick built a greenhouse in the backyard. He made it 11x16 ft. and installed air conditioning, heat, and humidity controls. Then he decided to grow orchids. Now the place is filled with beautiful, colorful orchids—50 in all—ranging in color from deep red through the purple spectrum to bright white.

"Those stories about orchids being parasites growing on trees just aren't so," Dick says. "Sure, they hang on trees usually sprouting in decayed matter in the crook of a limb but the roots are exposed to the air. They're not delicate either. An orchid is a hardy plant. I've had one that has been in bloom for nine weeks."

Dick pots his orchids in either pumice pebbles or wood chips. He feeds them liquid fertilizer and waters the pot on a regular schedule depending on the type of orchid.

"Actually, orchids require very little care once the greenhouse is in operation," Dick says. "I spend about 15 minutes a day caring for them plus a couple of hours on weekends 'policing up' and checking the heating or humidity equipment."

Some wives object to their husbands' hobbies on the basis of the time or money expended. Not Mrs. Hodges. Jessie (6021) occasionally sports an orchid corsage from Mr. Hodges.



BRILLIANT BLOSSOMS of 50 orchids fill the backyard greenhouse of Dick Hodges. He started the hobby

about two years ago with three Venus flytrap seeds. Now he provides orchid corsages for Mrs. Hodges.

Former U.S. Ambassador to Speak Oct. 28

Robert M. McKinney, former ambassador to Switzerland and editor and publisher of the *Santa Fe New Mexican*, will speak at the annual United Nations Week banquet in Albuquerque Oct. 28. Title of his talk will be "The Effect of the Balance of Payments Problem on World Leadership."

The banquet will start at 6:30 p.m. in the ballroom of the New Mexico Union at the University of New Mexico, according to Max K. Linn (3420), chairman of UN Week activities here.

The public is invited to attend, Max said. Tickets are on sale to Sandia Laboratory employees at the Tech Library, Bldg. 804. Cost is \$2.50 each.

In addition to the address by Mr. McKinney, several awards will be presented at the banquet. UNM foreign students will be honored, winners of a city-wide sixth grade poster contest will be announced, and the local high school teacher who has been most helpful in sponsoring UN activities will be honored.

Other UN week activities will include the presentation of a specially-prepared set of books discussing the United Nations to local high schools.

Sandia Basketball Now Organizing; Games Will Start Nov. 26

The Sandia Laboratory Basketball Association will organize for the coming season at a meeting Friday, Oct. 25, at 9 a.m. in Bldg. 610. Officers will be elected from organizational representatives present. Intermural play will start about Nov. 26 at the Sandia Base Gymnasium.

Sandia's Safety Record

Sandia Laboratory HAS WORKED 735,000 MAN HOURS OR 21 DAYS WITHOUT A DISABLING INJURY

Livermore Laboratory HAS WORKED 858,000 MAN HOURS OR 166 DAYS WITHOUT A DISABLING INJURY