

1000-POUND STEEL COVER is lowered when this rapid scan spectrometer is operated in a vacuum to permit rotating mirror (middle right) to reach 1100 revolutions/second. Physicist R. A. Hill (5122) adjusts a detector tube as engineer R. D. Fellerhoff (5141) looks on.

Scientist, Engineer, Craftsmen Make Possible New Spectrometer

When a scientist determines what kind of equipment he requires to best accomplish his particular study or experiment, sometimes the equipment is already commercially available. But more often existing equipment requires considerable modification, or the design is original and calls for close cooperation between scientist, engineer, and craftsmen.

A rapid scan spectrometer, now in operation in Bldg. 884, is an example of the specialized support given to members of Physical Research Organization by the Development Shops.

This spectrometer was devised by R. A. Hill of Plasmas and Kinetics Research Division 5122. R. D. Fellerhoff, an engineer with the scientific apparatus design group in Division 5141, worked with him on the design and was in charge of the actual

mechanical design and construction of the instrument. The apparatus was fabricated by Sandia's Development Shops.

The use of rapid scan spectroscopy has found wide application in the study of transient phenomena, ranging from chemical kinetics and flash photolysis to plasma physics, nuclear burst physics, and lasers.

Physical conditions, such as temperature, electron density, and pressure can be determined from the shapes or positions of the spectral lines emitted by the atoms or molecules under study. The new Sandia-designed spectrometer provides a method for scanning the spectrum very rapidly—a wavelength of 5000 Angstroms (blue light) to 6000 Angstroms (red light) can be scanned in four-millionths of a second with a resolving power of 42,000.

"This is a unique device which has already proved extremely versatile," Mr. Hill said. "Initially, it is being used to prove theoretical calculations on what plasmas do to spectral lines. Eventually we will conduct experiments using a laser to measure electron density independently, and compare that with spectrometer measurements of the broadening of hydrogen emission lines." The shift of spectral lines will also be measured to check existing theories.

The diagram of the optics system handed Mr. Fellerhoff defined the requirements and roughly depicted the size of the machine. The mechanical design of his general layout was based on stress and deflection analysis, mechanisms study, materials selection, and fabricating techniques.

Pattern and Foundry Section 4221-4, under B. C. McKay, was asked to cast from aluminum-magnesium, the 4- x 7-foot table for the equipment. "Stability, rigidity, and flatness were important considerations since any fluctuation during an experiment would affect the spectrum," Mr. Fellerhoff said. The base was cast in two identical sections and bolted together.

Craftsmen of Sandia's Machine Shop Division 4252, under W. F. Peay, were called upon to fabricate dovetailed arms for changing the position of mirrors and detection tubes. These had to operate smoothly to permit altering the distance of a mirror from a plane grating without changing the height or angle of the mirror. An alteration in either condition would affect the

(Continued on Page Two)

ECP Members Give \$149,942 to Agencies

At the end of July, members of the Employees' Contribution Plan had given a total of \$149,942 to the United Community Fund and seven other agencies. As the July checks—totaling \$17,631—were mailed recently, the following distribution had been made:

	July	Year-to-Date
United Community Fund	\$14,458	\$122,449
American Cancer Society	846	7,196
Bernalillo County Heart Association	740	6,282
National Arthritis and Rheumatism Foundation	264	2,246
N. Mex. Society for Crippled Children & Adults	528	4,484
National Multiple Sclerosis Society	229	1,981
Cerebral Palsy Association of Bernalillo County	141	1,196
Muscular Dystrophy Ass'n. of America	246	2,085
Reserve Fund	176	1,489
	\$17,631	\$149,942*

*This total includes the cash contributions and specific donations made at the beginning of this year's ECP drive. During 1964, Sandia Laboratory employees contributed \$182,428 to ECP agencies.

13th VEEP Workshop To Start Aug. 16

Sandia Laboratory's 13th Value Engineering Education Program (VEEP) will be conducted Aug. 16-27, according to Elmer Devor, supervisor of Value Engineering, Cost Reduction, and Supplier Evaluation Division 2563. J. M. Hueter and personnel of the division will conduct the 44-hour course with work divided between workshop and lecture activities.

Participants from various Sandia organizations will be assigned to project teams. The teams apply value engineering disciplines to various pieces of Sandia hardware or Sandia operations in an effort to achieve economy without compromising reliability, quality, or safety.

The 12th VEEP workshop was recently completed at Livermore Laboratory with 24 engineers participating. Mr. Devor with K. A. Sarason (2563) conducted the session assisted by R. C. Wishart of Livermore's Product Evaluation Division 8116.

Also at Livermore Laboratory, Mr. Devor conducted a "Short Shop" Value Engineering orientation for a group of Lawrence Radiation Laboratory supervisors and staff.

BTL Scientist Heads Radiation Physics Department



James C. King of Bell Telephone Laboratories, Allentown, Pa., has been transferred to Sandia Corporation to serve as manager of Radiation Physics Department 5210.

He replaces F. M. Smits, who has returned to Bell's Murray Hill Laboratory in New Jersey as head of the Ultrasonic Device Department.

A Bell employee for 12 years, Mr. King has been head of the Ultrasonic Thin Film Device Department. His other assignments have been at the Murray Hill and Whippany, N. J., laboratories in fundamental device development.

He received his BA degree in physics from Amherst College, and MS and PhD degrees in physics from Yale University.

SANDIA CORPORATION

LAB NEWS

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION / ALBUQUERQUE, NEW MEXICO / LIVERMORE, CALIFORNIA



VOL. 17, NO. 17, AUGUST 13, 1965

Sandians Join WE, BTL Men In Numerical Control Discussions

Western Electric's first Numerical Control Conference, to be held Aug. 25-26 at the Greensboro, N. C., Plant, will include some 70 delegates from Sandia Corporation, WE, Bell Telephone Laboratories, and the Teletype Corporation.

Attending from Sandia will be J. J. Kane and E. L. Emerson of Numerics and Engineering Procedures Division 2223.

The conference is aimed at cooperative planning and activity between the various companies in the field of numerical control. Until now developments along these lines have been on an independent basis.

Delegates to the conference will discuss areas of potential application of numerical control techniques in both research and development and in quantity production;

will exchange reports of current numerical control development at the various WE Works and other locations; and will consider needs for coordinated efforts by numerical-control users, with considerations toward better utilization of tools and information among locations.

In his presentation, "Numerical Control at Sandia Corporation," Mr. Emerson will discuss current applications as well as future plans at both Sandia and Livermore Laboratories. There will also be mention of the Interagency Mechanical Operations Group, comprised of representatives of contractors in the atomic weapons complex, and the success that organization has had in exchange of information and new concepts.

Sandians Participate in Naval Research Seminar Held Here

Several Sandians participated in the Second Annual Naval Research Reserve Seminar in Applied Research held on Sandia Base during the past two weeks. The seminar was sponsored by the Office of Naval Research, Washington, D. C., and managed by Naval Reserve Research Company 8-9 of Los Alamos and Naval Reserve Research Company 8-7 of Albuquerque.

Each year, the Office of Naval Research sponsors Research Seminars for the two-week active training period of Naval Reserve officers. Participants include Air Force, Army, and Navy officers from throughout the United States. Approximately 90 officers attended the seminar here, the second time the event was held at Sandia Base.

About half of the seminar schedule was lectures and the other half was laboratory-facility tours. Several days were devoted to weapons orientation. Tours included visits to Sandia Laboratory's environmental testing facilities in Area III and Area V reactor facilities.

During the seminar sessions L. P. Gise, Manager of the AEC Albuquerque Operations Office, discussed "Albuquerque AEC Operations."

Sandians appearing on the program and their topics included:

S. P. Schwartz, Sandia Corporation President, "Sandia Laboratory—Its Mission"; A. Y. Pope, Director of Aero Projects 9300, "Project REB"; J. C. Eckhart, Manager of Systems Evaluation Department 9210, "Sandia Activities in Support of Task Force Two."

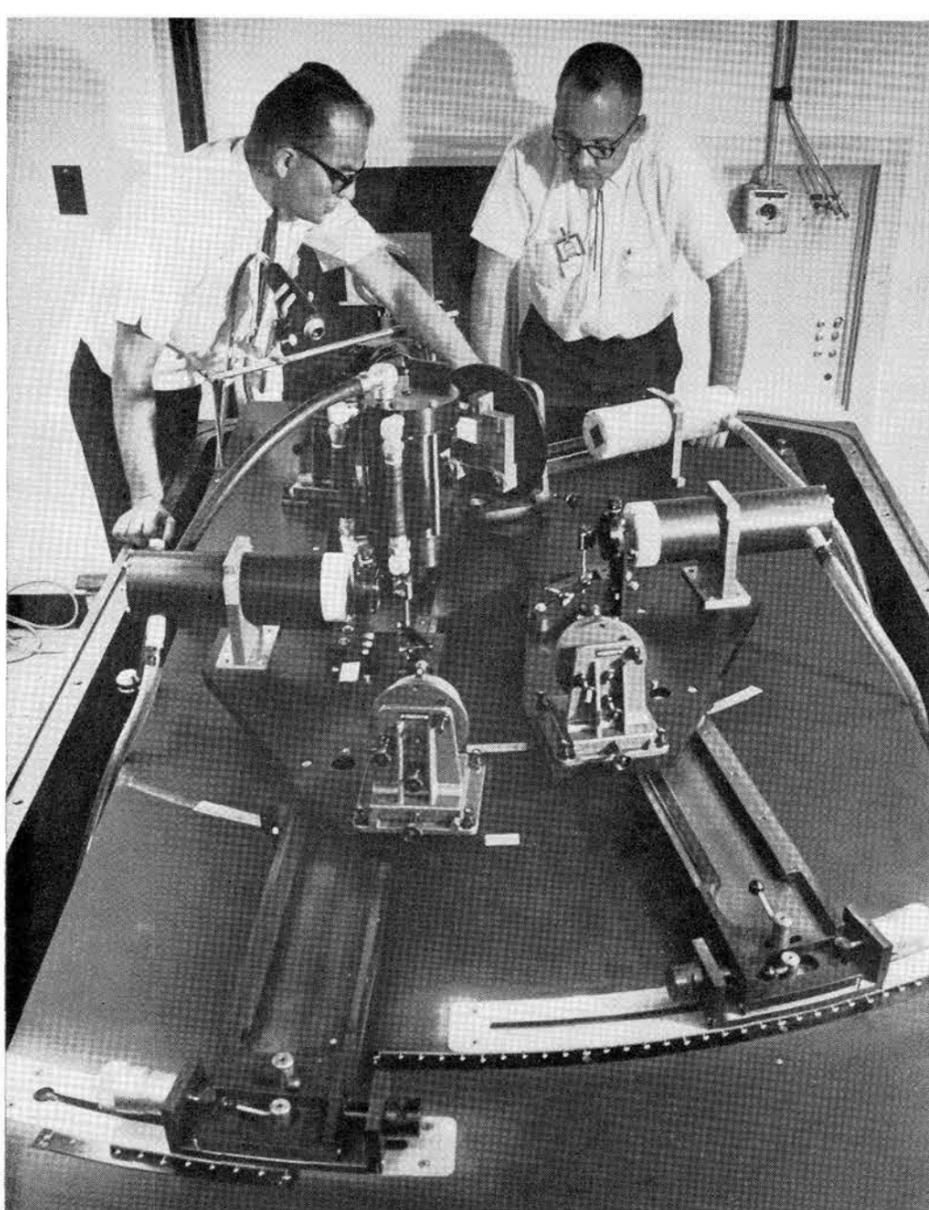
R. W. Henderson, Vice President 1000, "Early Experiences in the Manhattan Engineering District"; R. S. Claassen, Director of Physical Research 5100, "Extreme Physics"; J. D. Shreve, supervisor of Aerospace Sciences Division 5236, "Probing Aerospace, How and Why"; and A. W. Snyder, manager of Applied Nuclear Science Department 5220, "Modern Weapon Effects."

Mr. Snyder arranged the tour through the reactor areas and G. H. Roth, Environmental Research and Operations Department 7320, arranged the tour of Area III facilities.

Edwin F. Johnson of Tool Made Sample Engineering Division 2562, who is a lieutenant in the naval reserve and a member of NRR 8-7, was chairman of seminar activities Aug. 9.



ADDING EMPHASIS to cost reduction programs within the Atomic Energy Commission complex are these two large display boards presenting case histories of significant savings efforts. Discussing the importance of cost improvement are (l to r) S. P. Schwartz, Sandia Corporation President; H. E. Lenander, Director of Manufacturing Development and Chairman of Sandia's Cost Improvement Policy Committee; and D. P. Dickason, Assistant Area Manager for Administration and Security, AEC Sandia Area Office. The boards will be on display in the lobby of Bldg. 802 through Tuesday of next week.



ENGINEER R. D. Fellerhoff and physicist R. D. Hill (right) are aligning the plane grating (bearing 30,000 grooves/inch) which picks up spectral components as the light rays reflect off a rotating mirror. Detection tubes are on each side of the spectrometer.

Continued from Page One . . .

New Spectrometer

wavelength being studied. After the arms were hand polished, a profilometer was used to check surface smoothness. The Bldg. 808 Branch Shop, supervised by J. R. Bell, filled requirements for slit holders, photomultiplier containers, and a multitude of small items.

The system is contained in a commercially-obtained steel tank, which now bears only slight resemblance to its usual use as a gas tank. The tank was split lengthwise and stiffening ribs were added. Flanges were flame cut, then welded onto the edges. A groove, some 290 inches in length, was machined into the lower flange. A rubber "O" ring placed inside the groove makes the vacuum seal. Under vacuum the tank halves are held together with an external force of 45 tons. (Due to air resistance, a large rotating mirror—an essential part of the

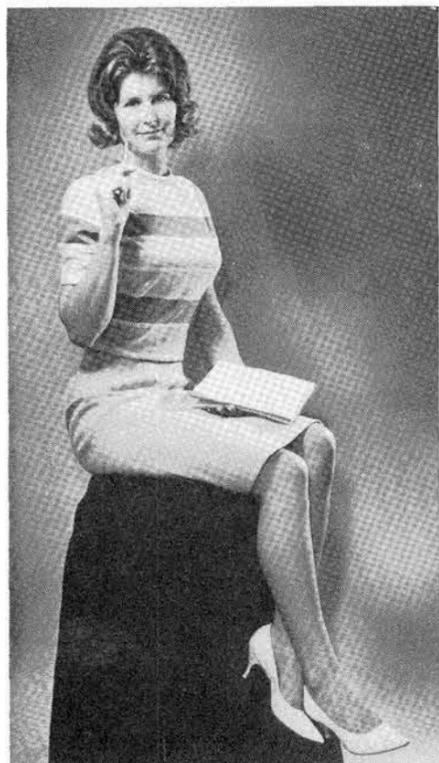
system—can only reach its top speed of 1100 revolutions per second in a vacuum.)

Improvisation was necessary in the shops as some of the work exceeded in size the capacity of their machines.

The system generally consists of a curved mirror (an off-axis paraboloid) which makes parallel the light rays from the source—an electromagnetic shock tube. These parallel rays are reflected to a high speed rotating mirror which causes the light to sweep across the face of a plane grating, breaking the light up into its spectral components. The spectrum is picked up by two separate detector systems, which are connected to outside electronic instrumentation for recording purposes.

The dual recording capability permits the simultaneous observation of two separate spectral lines emitted under identical physical conditions.

"This equipment is operating exactly as planned, and I'm particularly pleased with the way the shops supported the project," Mr. Hill concluded.



Donna Van Gundy (2125)

Take A Memo, Please

No safety device has yet been invented that can take the place of good judgment.

Devor Father and Son Tech Articles Appear In Same Magazine Issue

The Devor family may have scored a "first"—at least where VALUE ENGINEERING magazine is concerned.

Elmer Devor, supervisor of Value Engineering, Cost Reduction and Supplier Evaluation Division 2563, submitted an article entitled "Value Engineers Create Roadblocks, Too."

About the same time, an article was also submitted to the technical magazine by his son, Douglas, a graduate student and teaching assistant at Iowa State University. Doug's subject was "Progress in the Analysis of Creativity."

Both papers were accepted for publication by the Editorial Advisory Board, but it wasn't until biographies were received from both authors that the family relationship was discovered.

Take Note . . .

Electrical engineering students with junior status who would be interested in taking Electrical Circuit Analysis 312 or Electronic Circuit I 321 at the University of New Mexico "out-of-hours" during Fall semester are asked to call Arthur Hill (3134) at tel. 264-5957. At the present time there is only one mid-morning class scheduled for each course.

Winter bowling leagues are now organizing according to Employee Services Division 3121. Any Sandia Laboratory employee desiring to participate in league play may call O. J. Foster, recreation representative, 264-7775, for assistance in placement with a team.

Sandia Laboratory flag football league play starts Saturday, Sept. 11. All games will be played on Saturday mornings at the Sandia Base main football field. Six teams will be competing in the Sandia league. Members of the Flag Football Association Board, elected at a meeting last week, are Ron Martell (1521), Bill Saric (9326), Bob Balthaser (2131), Norris Rose (3122), Bob Dosch (1121), and Dave DeMattos (4112).

PhD Degree from Iowa Awarded Jim Fife



Jim Fife of Technical Information Department 3410 will receive his PhD degree in American Studies from the University of Iowa this month.

He earned his BA degree in history from Westminster College (Pa.) and

his MA in history from the University of Iowa. His doctoral dissertation was entitled "Eugene Manlove Rhodes—Spokesman for the Frontier Southwest."

During nine years at Sandia, Mr. Fife has been an Administrative Assistant, and has been a supervisor in Technical Information, Public Relations, and Records Management organizations. He has taught a number of Technical Writing and English Composition courses for Sandia's Employee Training and Education Division, and has taught English courses evenings at the University of New Mexico for eight years.

Sandia Speakers

M. T. Kane (9324), "Research Objectives of Sandia Corporation," Aerodynamic Deceleration Course, July 6-16, University of Minnesota.

J. T. Risse (1542), "Some Practical Limitations to Structural Reliability Predictions," Structural Reliability Seminar, June 24, University of New Mexico.

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AUGUST 13, 1965

Aircraft Club Has Zany History; Began With One Plane, No Pilots

It might sound pretty foolish to buy an airplane, when you don't know how to fly. But it didn't seem foolish to six Sandians who did just that in July 1961.

At first they could only admire their little Taylorcraft two-seater, but it wasn't long before they'd earned their pilot's licenses and were flying-members of SAC, the Sigma Aircraft Club.

Today, SAC, incorporated to protect its members, owns a sleek \$7000 four-seater Cessna 172 and provides maintenance, insurance, and tie-down costs. Members of SAC are Don Bauder, Bob Hedberg, and Dave Bickel of Environmental Testing, and Jim May, Wayne Cook, and Jim Berry of Special Projects.

Club president Don Bauder said the single engine aircraft is available to members

on a modified first-come, first-served basis, and is in the air an average of 20 hours a month. When on the ground it is tied down at the Albuquerque Sunport.

Don added that by owning the plane, members can fly for only \$5.50 an hour. Private flying services generally cost about \$15.

"As a result, we can afford to log more flight time. For example," Don said, "nearly every one of the members has taken his family on a trip at one time or another, and the plane has landed at airports in Mexico, New York, Iowa, and Kentucky."

So it appears that the original idea of the group, to "buy now, fly later," has worked out pretty well. "After all," Don comments, "that's what we were after in the first place—a way to learn to fly."



MEMBERS of the Sigma Aircraft Club congregate in front of their airplane at the Albuquerque Sunport. From left, they are Jim May (9221), Don Bauder (7311), Wayne Cook (9227), Bob Hedberg (7326), and Jim Berry (9221).

SANDIA CORPORATION LAB NEWS



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

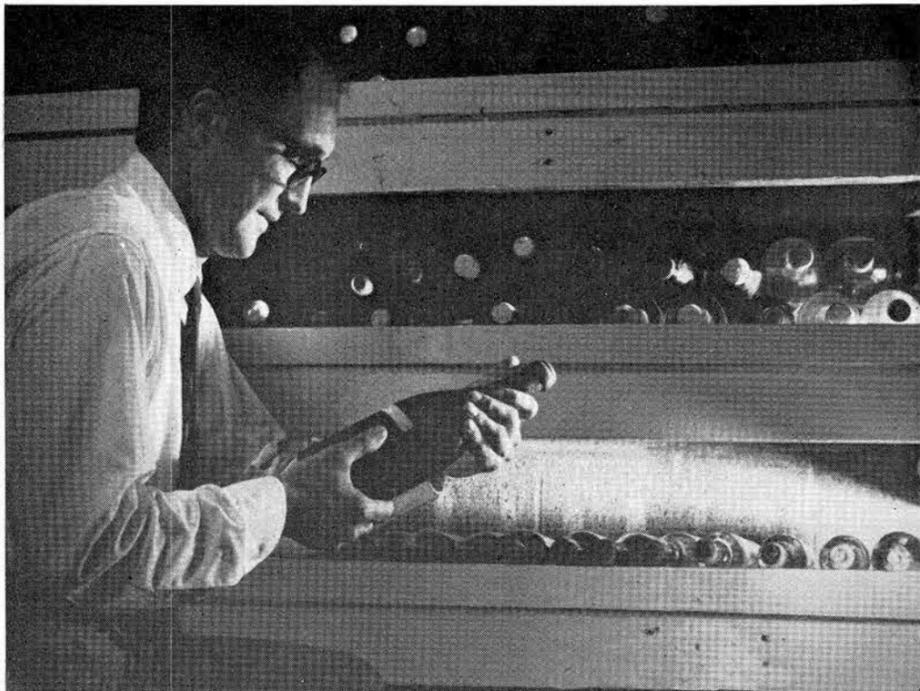
Editor: Robert C. Colgan
Sandia Corporation, Albuquerque, New Mexico

Editorial Offices
Sandia Laboratory
Albuquerque, New Mexico
Employee Publications
Bldg. 800
Room 112
Tel: 264-1053

Livermore Laboratory
Livermore, California
Public Information
Bldg. 912

Tel: Hilltop 7-5100, Ext. 2395

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Sandian Has Palatable Hobby — Wine Making

Even though Livermore Laboratory is located in one of California's finest wine producing areas, it is a bit unusual to read an advertisement on the employee bulletin board that offers wine making equipment for sale.

The following ad recently appeared on the Laboratory bulletin boards: "For Sale — Wine Making Equipment: complete set including 1/2-ton hydraulic press, crusher, 150-gallon vat, and two 50-gallon barrels."

The ad was posted by Ben Guerin (8161), who has been making wine at home for more than three years. During this time Ben and his wife Hilda have produced almost 600 gallons of various wines. They have made 13 different cherry wines and two major grape wines—Zinfandel, a red wine, and Semillon, a white wine.

Wine making is a hobby with Ben. "I make wine like other people collect coins or stamps, but I believe that my hobby

BECAUSE WINE CONTINUES to age after being bottled, proper storage is a critical part of the wine making process. Here Ben Guerin (8161) inspects some of his oldest wines in his wine-shelter.

is more interesting because I can drink the results.

"My mother taught me how to make wine when I was a boy. She had learned the art from my grandfather who was from Germany. She also taught me how to brew beer, but brewing beer is illegal in the United States. In fact, wine is the only alcoholic beverage you can make at home without violating Federal regulations," he said.

The Federal Government considers wine a food, and therefore will issue a permit to an individual which allows him to make a maximum 200 gallons of wine a year. The permit is free, but tightly controlled by a Federal agency. "The wine cannot be given away or sold; it must be consumed in the home," Ben related.

Ben, a native of New Mexico, joined Sandia Corporation in Albuquerque in 1952 and transferred to Livermore Laboratory in 1959. Although he had made small batches of wine in New Mexico, he really didn't get involved with his hobby on its present scale until he moved to California.

"Wine making at home is not difficult, but it does require patience and attention to details. It takes about 700 pounds of grapes to make 50 gallons of wine and costs about \$1 per gallon," he said. "This is inexpensive when you consider that similar commercial wines cost \$2 a fifth and they are often not as good as home-made wine. Commercial wines may have additives and stabilizers that detract from the natural flavor of the wine."

According to Ben, time is the most important single factor in producing a good wine. The fermentation process may take from 10 to 14 days, but this is just the beginning of the cycle. After the wine has fermented, it should be stored in barrels to age from one to five years, and then bottled and stored for an additional one to six years—"that is, if you can keep from drinking it that long," he quipped.

Once the wine is bottled it should be stored in a cool, dark place for final aging and should not be disturbed during this phase of the cycle.

Since time is an important factor, storage space becomes a necessity. Ben has solved his storage problem by building racks for the bottled wine in his completely equipped fall-out shelter.

Although Ben enjoys making wine, he has decided to temporarily put aside his hobby and sell his equipment. "I have enough wine in storage to last me for several years," says Ben. "And I can always make a small batch from time to time to keep my 'wine shelter' from running dry."

Welcome Newcomers

July 2 - 29

California	
William T. Ashurst, Danville	8146
Joyce E. Blanchard, Livermore	8211
Jesse Castellon, Stockton	8252
Paula K. Cooper, Livermore	8252
Judith Slagel, Livermore	8144
Robert L. Tirnetta, Livermore	8232
Oregon	
Robert W. Chapman, Corvallis	8142
Transferred from Albuquerque	
John M. Nielson	8122
Jerry L. Slusser	8112
Youth Opportunity Program	
Arnold L. Birr, Livermore	8210

Congratulations

Mr. and Mrs. Dick Cook (8163), a daughter, Sheryl Ann, July 23.

LIVERMORE NEWS

G. R. Dunbar and K. D. Marx Awarded Master's Degrees

Two Livermore Laboratory employees, George R. Dunbar and Kenneth D. Marx, received MS degrees in applied science from the University of California recently. Both attended the University's Department of Applied Science at Davis/Livermore.

George, an engineer in Preliminary Design Department 8140, joined Sandia in July 1959. His Bachelor's degree was from Oregon State College in mechanical engineering.

Ken, an electrical engineer in Test Department 8120, has been with Sandia since July 1961. He also received his Bachelor's degree from Oregon State College and last month was awarded a fellowship for continued graduate study from the Fanny and John Hertz Foundation. He plans to specialize in plasma physics while working toward his doctorate.



G. R. Dunbar

K. D. Marx

Cruise-Dinner-Dance Set for Oct. 1

The employee's Dance Committee at Livermore Laboratory has chartered a boat and announced that all systems are "go" for the cruise-dinner-dance, Friday, Oct. 1.

The evening's activities will include a sunset cruise around San Francisco Bay, dinner at Dominic's Harbor Restaurant in Tiburon, and a dance to live music during the return cruise.

The cruise is scheduled to depart Jack London Square in Oakland at 6:45 p.m. and terminate at the same dock about 12:30 a.m.

Cruise-dinner-dance reservations at \$7.50 per person are available on a first-come, first-served basis from Dance Committee chairman Mike Ferrario (8252-1) and Jim Henderson (8211). Reservation sales will close Aug. 16.

"Capacity of the boat is limited to 220 persons, so pick up your reservations early," said Mike.

Additional information is posted on Laboratory bulletin boards.

Two Sandia Films Selected For Showing At WESCON-65

Two Sandia Corporation motion picture films have been selected for showing at this year's Western Electronic Show and Convention (WESCON) to be held at the Cow Palace in San Francisco, Aug. 24-27.

WESCON selected the Sandia-produced films, "Vela Program" and "Clean Air is a Breeze," to be shown in a film session with 17 other technical motion pictures as part of WESCON's regular technical program. The film session will be a continuing series of motion picture presentations scheduled to start at 10 a.m. each day of the convention and show.

A non-profit event, WESCON is co-sponsored by Western Manufacturers Association (WEMA) and California units of the Institute of Electrical and Electronics Engineers (IEEE). WESCON's primary purpose is the advancement of the electronics art technically and industrially in the Pacific Coast area. The annual show and convention is held alternately in Los Angeles (even-numbered years) and San Francisco (odd-numbered years).

This year's show will remain open until 9:30 p.m. on two evenings—Wednesday, Aug. 25, and Thursday, Aug. 26—to accommodate visitors not able to attend during normal working hours.

Bell Exhibit Changed Recently at Disneyland

The Bell System exhibit at California's Disneyland, which has attracted more than 15 million visitors since it opened five years ago, has been extensively remodeled to present new informative and entertaining displays.

Special lighting effects and design give visitors the illusion of being a thousand miles in space as the story of worldwide communications is unfolded. While the hostess narrates the story, visitors look back upon the world to see dramatic glimpses of the transcontinental cable network and demonstrations of microwave radio relay, operations of the cable ship Long Lines, and a simulated transmission of the Telstar communications satellite.

There is audience participation in a series of demonstrations previewing the remarkable flexibilities of electronic switching.

Return attractions include the Picture-phone service demonstration between Disneyland and the Bell System exhibit at the New York World's Fair.



SENSE IN THE SUN—Heeding a warning in a current American Cancer Society pamphlet, Brenda Redenbaugh (8215) protects herself from overexposure to the sun with a large sun hat and skin lotion. It is estimated that there will be approximately 80,000 new cases of skin cancer diagnosed this year—cases that might be avoided by protecting the skin from too much sun.

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LAB NEWS

AUGUST 13, 1965

Supervisory Appointments



WILLIAM N. CAUDLE to supervisor of Earth Sciences Division 9327, Aero- and Thermodynamics Department, effective Aug. 1.

Bill has been in the aerodynamics group since he came to Sandia in June 1957.

Immediately prior, he was at the University of Alabama where he received a BS degree in aeronautical engineering. Bill has also done graduate study at the University of New Mexico.

He is a member of Tau Beta Pi, Sigma Pi Sigma, and Theta Tau, honorary societies, and is past chairman of the New Mexico chapter of the Institute of Aeronautical Sciences.

He served four years in the Air Force.



ERNEST E. ALFORD to supervisor Material Services Division 8245 at Livermore Laboratory, effective Aug. 1.

Ernie joined Sandia Albuquerque in 1949, working in the motor pool, the electrical fabrication shop, and an engineering project division. In 1956 he transferred to Livermore where he worked in full-scale testing and on telemetry systems prior to his appointment to section supervisor in the Model Shop Division in February 1959.

He studied electrical engineering for two years at the University of New Mexico and a year at Creighton University, and is presently attending San Jose State College, majoring in industrial technology.

Ernie is a veteran of two years in the Air Force.



CORONADO CLUB MEMBERS elected or re-elected these directors during the annual meeting, Aug. 2. Front, l to r, C. B. O'Keefe (3126), M. M. Newsom (5611), J. H. Shelby (4253), Pearson Crosby (AEC/ALO). Back, l to r, D. M. Olson (1530) and D. P. Dickason (AEC/SAO), recently appointed AEC representative. New director E. D. Herrity (4342) was not present for photograph.

Club Members Elect Two New Directors, Re-elect Four Others

Coronado Club members conducted their annual meeting in record time Aug. 2, electing two new directors and re-electing four others.

Max Newsom (5611) was re-elected to a one-year term and was elected president of the board during a directors' meeting a few days later. Incumbent directors Andy Carter (5613) and Jake Carroll (4352) were elected vice president and treasurer, respectively.

Ed Herrity (4342) was elected to a two-year term and will be board secretary. Another new director, Del Olson (1530), will serve two years and will handle publicity.

Re-elected to two-year terms were Joe Shelby (4253), in charge of games, and Pearson Crosby (AEC/ALO), in charge of group travel and bar. Charlie O'Keefe (3126) was re-elected for one year and will direct the Club's swimming activities.

Incumbent director Fred Bogott (ACF Industries) will be in charge of entertainment, and another incumbent, Doug Ballard (2564), will be concerned with special interest groups.

During the board meeting, the directors were named to serve on standing committees on Finances, Social Activities, Safety, and Furnishings and Decorations.

Furniture, Bowling Equipment Auction Combined with Cookout

Is your den looking shabby? Men, are you proud of your ability to barbecue a steak? If the answer is "yes" to both of these questions, the Coronado Club's forthcoming auction and family steak cookout is tailored for you.

Both events will be held Saturday, Aug. 21, starting at 4 p.m.

The auction, with a professional auctioneer presiding, will include both furniture and bowling equipment from the Club's basement room. The rattan settees and chairs have separate overstuffed cushions which can be recovered. There are also plastic and chrome bar stools, black metal candleholders with frosted hurricane chimneys, and coffee tables. The bowling equipment includes both balls and shoes. All items being auctioned are in used condition.

During the cookout, Dad will have a chance to show his skill in grilling steaks. The steaks and extras will be provided by the Club along with assistance in handling the steaks. The price: \$2.25 for adults, \$1.75 for children. Reservations may be made by calling 264-4561.

BOWLING SHOES, balls, hurricane lamps, and rattan furniture are among the items to be auctioned by the Coronado Club Aug. 21. Club employees Domingo Slade (left) and Luberto Ortiz are getting items ready for the big sale, which will be followed by a Family Steak Cookout.



THOMAS H. MARTIN to supervisor of Flash X-ray Research Division 5221, Applied Nuclear Science Department, effective Aug. 1.

Tom has worked in Advanced Development Division 1322 since coming to Sandia in 1956. Most recently he has been project leader of a group concerned with fluidics.

He has BS and MS degrees in electrical engineering from Purdue University and last June received a second MS degree — in mechanical engineering — from the University of New Mexico. He is a member of Tau Beta Pi and Eta Kappa Nu, honorary societies.

While on leave of absence from Sandia, he served two and a half years in the Air Force.

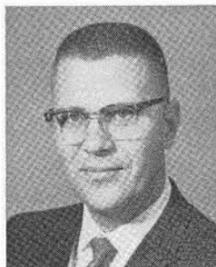


ROBERT E. TAYLOR to supervisor of Diagnostic Aircraft Section 7255-3, Nuclear Test Department, effective Aug. 1.

Bob has been at Sandia since June 1956, assigned originally to Apparatus Development Division as an electrical engineer. He later transferred to Field Testing and was assigned to one of Sandia's diagnostic aircraft when they were acquired in 1964.

During three years with the Air Force (while on leave of absence from Sandia), Bob served as a pilot and later a radar and communications officer in Alaska.

He received his BS degree in electrical engineering from North Carolina State College.



FRANK W. MULLER to supervisor of Advanced Program Planning Division 2113, Quality Assurance Department, effective Aug. 1.

He has been working in Reliability Department since being hired at Sandia in 1957.

A graduate of Texas A. & M., he has a BS degree in electrical engineering. Frank has also done graduate study at the University of New Mexico as an "on-roll" member of Sandia's Technical Development Program.

He is a member of Tau Beta Pi and Eta Kappa Nu, honorary societies. He served four years in the Navy.



PAUL M. STANFORD to supervisor of Special Analysis Division 4154, Cost and Accounting Department, effective Aug. 1.

During his six years at Sandia, Paul has worked both in Auditing Department and in Budget and Disbursements Accounting Department.

He previously worked two years for the U. S. Army Audit Agency as a civilian auditor.

Paul has a BA degree in accounting from Texas Technological College.

He has been in the New Mexico Air National Guard for six years.

Currently, Paul is associate director of the Albuquerque chapter of the National Association of Accountants.



GARRETT B. DRUMMOND JR. to supervisor of Ordering, Expediting, and Traffic Section 8244-1, Procurement Research and Administration Division, Livermore Laboratory, effective Aug. 1.

Gary joined Sandia in Albuquerque in May 1952. He transferred to Livermore Laboratory in September 1959. During the past six years he has been assigned work in procurement services as a P&S Coordinator and Small Value Buyer.

Before his employment with Sandia, he worked for a paper company in Albuquerque.

Gary attended the University of New Mexico and Diablo Valley and Chabot Colleges in California.

Coronado Activities —

August Moon Ball

An August moon, you, and quite a few other people are expected for the Coronado Club's August Moon Ball tomorrow evening. Activities will get underway at 6 p.m. when a California winery offers samples of its product. A prime rib dinner will be served from 7-9 p.m., followed by dancing to the music of the Sol Chavez orchestra.

Social Hour Buffets

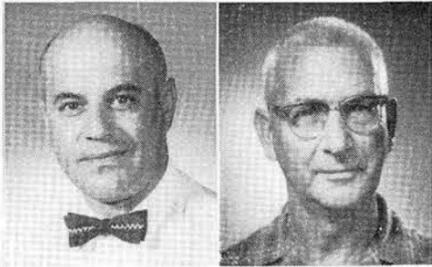
Tonight's Social Hour will feature the music of the Estancia Valley Boys. A chicken buffet will be served. Tickets are \$1.25 for adults, \$1 for children.

Next Friday the popular seafood buffet will be offered following Social Hour. The Jess Sawaya Combo will provide music for dancing or listening. Tickets for the buffet are \$1.25 adults, \$1 for children.

Bridge Club

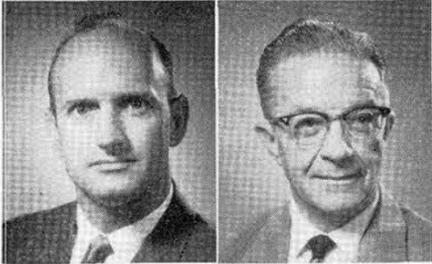
Coronado Bridge Club members will hold a bridge dinner Monday, Aug. 16, at 6 p.m. Reservations should be made with Mrs. Tanner, tel. 299-2532. On the following Monday, the monthly master point bridge game will begin at 7 p.m.

Service Awards 15 Years



Oscar M. Fligner
1524
Aug. 14, 1950

Harry M. MacNeill
2212
Aug. 14, 1950



Francis H. Treon
3243
Aug. 14, 1950

Harry C. Uren
4135
Aug. 14, 1950



John Platero
4518
Aug. 14, 1950

John P. Logan
9423
Aug. 14, 1950



Elizabeth L. Frost
1442
Aug. 15, 1950

Pedro Ortiz
4518
Aug. 15, 1950



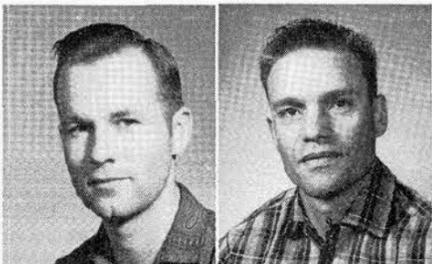
James M. Murray
2221
Aug. 18, 1950

Robert L. Stewart
3242
Aug. 21, 1950



Benjamin L. Armijo
4575
Aug. 21, 1950

Patricia Anderson
7216
Aug. 21, 1950



J. F. Campbell, Jr.
2542
Aug. 22, 1950

Joseph L. Maestas
4613
Aug. 22, 1950

Planck and the Quantum of Action

The following article is a continuation of the story of Max Planck, a quiet man who left his mark on the development of the scientific world. He was awarded the Nobel Prize in Physics in 1918 for work done in 1900 and 1901.

This is the final article in the series on the great physicist.

By C. C. Hudson (5590)

Part II

Planck turned now to his background in thermodynamics. From this he deduced a quantity which should be proportional to the energy of radiation. By intuition, he then formed a mathematical relationship using this quantity which seemed to explain the experimental data pretty well. He presented this result to the Berlin Physical Society on Oct. 19, 1900. The very next morning, he writes, the experimentalists called on him to show how extraordinarily well his formula fit the black body observations. In fact, the more precise the observation, the closer it came to the curve. Could this be sheer luck?

Planck thought not, and in order to see more clearly into the result, went back to the probabilistic ideas of Boltzmann. He related entropy to the logarithm of a probability function, W . "Now as for the magnitude of W , I found that in order to interpret it as a probability, it was necessary to introduce a universal constant which I called h . . . So long as h could be regarded as infinitesimally small, everything was in perfect order. But in the general case difficulties would arise at one point or another. . . My futile attempts to fit the quantum somehow into the classical theory continued for a number of years, and they cost me a great deal of effort."

Planck first presented the theory in which h was not allowed to be infinitesimally small in 1901. He found that in this case, the resonators could not have arbitrary energies, but had to have energies in multiples of h . It was then a simple step to show that the actual energy of a resonator was $h\nu$, where ν was the frequency of oscillation. If this theory were correct, then the energy of resonators could exist only in discrete quantities. Since the theory did fit the data very well indeed, the quantization of energy was



Eileen W. Young
4610
Aug. 23, 1950

Verne C. Honeyfield
3242
Aug. 24, 1950

10 Years

Robert L. Parker 1424, Vlasta E. Hruska 5620, Stoughton Bell II 5253, Richard H. Berg 1423, Jose C. Asturias 2543, Delores N. Smith 4233, and Edgar E. Downing 4542.

Bids Sought for Construction Of Area III Testing Facility

The Atomic Energy Commission has invited bids for construction of an impact test facility in Tech Area III at Sandia Laboratory.

The project calls for construction of an earth-covered concrete control building to be used by Organization 7300. The job also includes support facilities, a gravel road, fencing, and utilities.

Bids are scheduled to be opened at the Commission's Albuquerque Operations Office on Sept. 2. Project engineer W. G. Mauer (4543) said work is to be completed within 120 days after the contractor is given notice to proceed.

Bids are being sought from small business firms only.

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LAB NEWS

AUGUST 13, 1965



Max Planck

recognized. A famous book on physics describes the results as follows:

"It must be emphasized that the assumption of a discrete set of possible energy values, or energy levels, for an oscillator (resonator) was completely at variance with classical ideas. According to this assumption, if the energies of a large number of oscillators were measured, some might be found to have zero energy; some, energy $h\nu$ ergs each; others $2h\nu$; and so on. But not a single oscillator would be found which had energy, say $1.75h\nu$ or $3.94h\nu$. When the energy of a given oscillator changes, therefore, it must change suddenly and discontinuously."

Falls Into Trap

Following quickly on the heels of this startling conclusion which completely contradicted classical ideas, Planck postulated that when a resonator absorbed or emitted energy, it had to do so in discrete amounts or jumps and these amounts of energy were called "quanta." Then, however, he realized that he had blundered into a trap. If a resonator emits energy in a quantum and if this energy is radiated in all directions, as Hertz had demonstrated, then how could a nearby resonator gather up all the energy of that quantum and absorb it? Absorption with this assumption would be impossible. So Planck withdrew the requirement that absorption had to take place in discrete jumps, and went ahead to derive his famous radiation formula that the average energy of an oscillator is

$$E = \frac{h\nu}{e^{-h\nu/kT} - 1} + \frac{1}{2} h\nu$$

where h is called Planck's constant. The first term on the right hand side describes the radiation energy density of a black body—that is, a body in thermal equilibrium—and it is commonly used nowadays to study dense hot gases like the sun and atomic fireballs.

But the quantum theory was by no means established overnight. The assumption of the absorption of energy in quantum jumps that Planck had rejected came back to plague him. Men like Bohr and Einstein wanted the quantum absorption. Planck labored many more years attempting to clarify the annoying discrepancies of the quantum theory. In fact it is only in recent years that a satisfactory theory of absorptions of photons has been formulated. Although Planck stayed in the front ranks of physics for the rest of his life, he made no further contributions of note.

He was awarded the Nobel Prize in Physics in 1918 for work that was done in 1900 and 1901. The long delay in recognition reflects the difficulty with which Planck's ideas were accepted. Only after they were tried with success on a series of seemingly impossible problems, photoelectric effect, specific heats of solids, atomic spectra, etc., did the world accept the quantum. Niels Bohr paid Planck the following tribute:

"Scarcely any other discovery in the history of science has produced such ex-

traordinary results within the short span of our generation as those which have arisen directly from Max Planck's discovery of the elementary quantum of action. . . It has shattered the foundations of our ideas not only in the realms of classical science but also in our everyday ways of thinking."

Active as Author

Max Planck was a quiet introspective man. He was a teacher as well as a theorist and wrote a number of textbooks as well as essays. His areas of interest ranged far from physics, to psychology, religion, and music. He was the antithesis of Rutherford: quiet vs energetic, introspective vs bluff, retiring vs congenial, sedate vs boyish. But his mind was keen, steady, and stubborn. Let us sample more or less at random from his essays to get the flavor of his thought.

"In order to gain a correct insight into the regular course of a process, one must take every precaution lest the process be influenced by the method of observation used. Thus, for instance, when trying to ascertain the temperature of a body, we must not use any thermometer the introduction of which could cause a change in the temperature under observation; similarly, in the microscopic observation of the processes taking place in a living cell, we must not employ illumination which might interfere with the normal course of those processes. All that holds true for physical and biological processes applies naturally to the same extent to mental states and processes, too. It is one of the most elementary principles of experimental psychology that an observation may produce a totally false finding if the subject knows, or suspects, that he is being observed. For this reason, under certain circumstances, the observation itself will constitute a serious source of error." Or again:

"The law of causality is neither true nor false. It is rather a heuristic principle, a signpost to help us find our bearings in a bewildering maze of occurrences, and to show us the direction in which scientific research must advance in order to achieve fertile results. The law of causality, which immediately impresses the awakening soul of the child and plants the untiring question 'why?' in his mouth, remains a lifelong companion of the scientist and confronts him incessantly with new problems. For science is not a contemplative repose amidst knowledge already gained, but is indefatigable work and an ever progressive development." And finally:

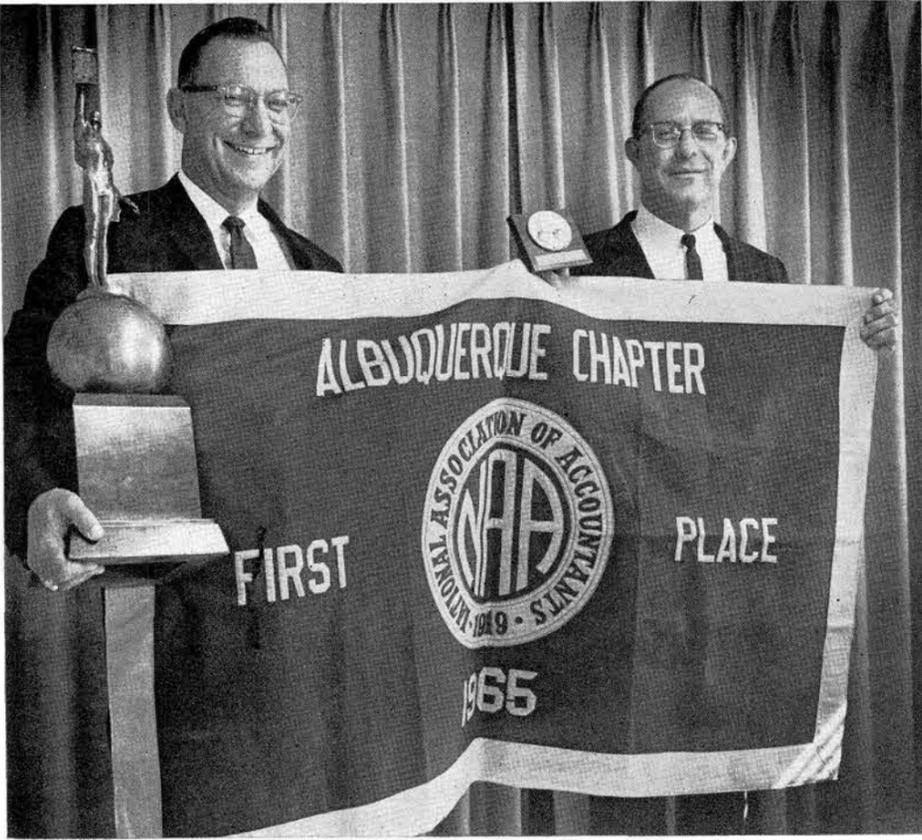
Joint Battle

"Religion and natural science are fighting a joint battle in an incessant, never relaxing crusade against scepticism and against dogmatism, against disbelief and against superstition, and the rallying cry in this crusade has always been, and always will be, 'On to God!'"

Max Planck died in October 1947. He spent all his life in Germany and watched the nearly incredible rise and fall of the German Empire, which was supported largely on the technological advances made possible by the scientific discoveries of him and his colleagues. His later life was melancholy and marred by several personal losses as well as by his falling out with the German regime. In his memorial address at Planck's funeral, Max von Laue described the depressing, crushing losses heaped on this sensitive man:

"The birth and meteoric ascent of the German Empire occurred during his lifetime, and so did its total eclipse and ghastly disaster. These events had a most profound effect on Planck in his person, too. His oldest son, Karl, died in action at Verdun in 1916. In the Second World War, his house went up in flames during an air raid. His library, collected throughout a whole long lifetime, disappeared, no one knows where; and the most terrible blow of all fell when his second son, Erwin (accused of plotting against Hitler), lost his life in the rule of terror in January 1945. While on a lecture tour, Max Planck himself was an eyewitness to the destruction of Kassel and was buried in an air raid shelter for several hours."

His wife in 1948 wrote that Planck told his young son Karl during a walk in the park, "Today I have done something that will rank my name with Isaac Newton." He had just invented the quantum hypothesis, which revolutionized scientific thought on the atomic scale of things.



THREE MAJOR AWARDS, presented by the National Association of Accountants to the Albuquerque Chapter, are displayed by S. F. Harvey (4151-1), left, and F. E. Mitchell (4134-4). They represented the local group at the annual convention.

Three Major National Awards Won by Albuquerque NAA Chapter

Two Sandia Corporation employees who recently attended an annual convention of the National Association of Accountants (NAA) returned from Miami Beach with three major awards.

The Sandians, F. E. Mitchell (4131-4) and S. F. Harvey (4151-1), officially represented the Albuquerque Chapter of NAA at the conference. The chapter, whose membership of 144 includes 33 Sandians, won the Stevenson Trophy for all-around chapter proficiency, a Membership Achievement Award for the best record of new member applications, and a Chapter Competition Banner.

Mr. Mitchell, who served last year as director of special activities for the local organization, explained that the Stevenson Trophy is given to the chapter accumulating the highest point-total in nationwide

chapter competition. There were 177 chapters entered.

Points were awarded for achievement in a number of areas such as publicity and communications, attendance and membership, and educational activities.

Mr. Harvey was membership director of the Albuquerque Chapter, which was cited for its 83 per cent climb in membership during the year ending May 29.

Chapter Competition Banners were awarded to each of the 20 leading chapters in the Stevenson Trophy competition.

Each of the awards will be re-presented to the Albuquerque Chapter at its Sept. 16 meeting in the main ballroom of Western Skies Hotel. The presentations will be made by Joseph L. Brumit, NAA president; and Rawn Brinkley, NAA executive director.

A Tree Grows in Tonopah — Just One Tree Grows in Tonopah

A tree grows in Tonopah. It's small, but it's getting there. It's important because it's the only one in the Sandia Corporation housing area, possibly the only one in town. There are a few Joshua trees, but they're more cactus than tree. There are a few planter boxes with little bright flowers. Otherwise, there is no greenery on the mountain above Tonopah where the Sandians make their home.

The problem, any Tonopah Sandian will tell you, is not water. The problem is the rock. The whole town sits on a rock formation. Only a couple of inches of dust covers the rock. Even the loco weed has to struggle to grow.

Efforts to grow trees ended in frustration. Other trees had been tried. Dorothy Robinett (husband Rush heads Electronics Measurements Division) was determined that this one was going to survive.

Local legend around Tonopah touted Dominic Lambertucci, an old-timer who settled in Tonopah during the silver boom around 1900, as the only man who could make a tree grow in Tonopah. If he planted it, it would have a chance.

From the Lambertucci ranch outside of Tonopah, Dorothy got the Chinese Elm seedling. Rush dug the hole for the tree near the roadbed into the housing area. This way he utilized the fill dirt from the road. He also contributed six trout to fertilize the roots.

Mr. Lambertucci (who has since passed away) carefully supervised the planting operation. For the past two years, Dorothy has given the tree much "tender loving care" while Sandians of the housing area have contributed advice, encouragement, and interest.

The tree is now about 12-feet tall, a local landmark.



TONOPAH TREE — This 12-foot Chinese Elm tree is the only tree in the Sandia housing area in Tonopah. It is carefully nurtured by Rush and Dorothy Robinette.

Congratulations

Mr. and Mrs. S. F. Bragg (4231), a daughter, Rhonda Sue, Aug. 2.

Recreation Essential to Health In Today's 'Age of Anxiety'

By S. P. Bliss, M. D.
Sandia Corporation Medical Director

Most people know more about the essentials of work than they know about the importance of its opposite or counterpart, recreation.

The dictionary defines recreation as, "a pastime, diversion, exercise or other resource affording relaxation and enjoyment." Note the key words: pastime—diversion—exercise—relaxation—enjoyment.

Recreation is being more widely recognized as essential for all persons. And if we are to live normal and well-rounded, healthful lives, we need to learn to make the proper balance between work and recreation as either can be overdone. In our busy work-a-day world, which is often referred to as "the age of anxiety," it is becoming more and more necessary for us to balance refreshing relaxation with our daily toil and anxieties. Recreation is assuming greater importance than ever before.

The effect of anxiety on all ages is now recognized. There is hardly a parent, teacher, or worker associated with other persons, ranging from infancy to old age, who cannot cite from his personal observations and experiences examples of persons torn by anxieties.

Medical practice has long appreciated the role of rest and relaxation in rehabilitating the sick mind and body. As medical science discovers or develops therapies which increase the life span, the importance of procedures which make life more meaningful and zestful to the individual himself, as well as to society, is highlighted. Recreation has much to contribute, not only in rehabilitating the ill but in preserving wholesome physical and mental health in those who are not ill. Recreation is indeed an important adjunct to medicine.

In the words of Dr. Martin Meyer, Coordinator of Activity Therapy of the Division of Mental Health in Indiana, recreation has been recognized as "an essential ingredient in the formula for abundant and fruitful living and in our pursuit of happiness. It is the time we pause, change our pace, refresh ourselves, and recover our energies, spirit and perspective to face the strains and drains of a mechanized, competitive, and sometimes fearful society. Through recreation, we learn to minimize our problems, enjoy our fantasies, and for a moment pursue our natural instincts for creativity, free choice, and selective companionship."

Psychiatrists and general physicians, as well, have become increasingly aware of the futility of "rest cures" for patients physically or mentally ill. They know that the patient must also have meaningful activity. The Executive Director of a home for the aged commented, "... one can understand truly the depth of meaning in the phrase 'having nothing to do is the most dulling human experience'."

According to TODAY'S HEALTH, a publication of the American Medical Association, recreation has different mean-

ings for different people. An activity which is work for one person may be recreation for another. Not the form of the activity but the attitude of the person engaging in the activity is the key to recreation. Genuine relaxation is possible only when the activity is undertaken by the participant for the sake of the activity itself. Recreation, in the true sense of the term, can take place only during periods of healthy leisure and relaxation. Often persons engage in what they call recreational activities so compulsively, so intensely, so seriously, and in such an unrelaxed fashion that they are worn out by these activities intended to help them relax. Under these conditions, the intended function of the activity, namely, to improve the health, expand and develop the personality, is not fulfilled.

What types of recreation have been found to be useful adjuncts to preventive medicine as well as to treatment? Formerly there was a tendency to think of recreation chiefly in terms of competitive sports or strenuous activities, pursuits which win contests and develop big muscles. Participation in this kind of activity, except as a spectator, is principally for the younger people. As the body progresses toward maturity and later life, strenuous exercise is not recommended. Indeed, it can be quite dangerous. Fortunately, the concept is changing. The scope of recreation is broadening to include many activities which may be undertaken by an individual or a small group. In reality, any activity which is not harmful to the individual or to others can be recreation, if it is an experience providing immediate and inherent satisfaction to the individual who voluntarily participates in an activity.

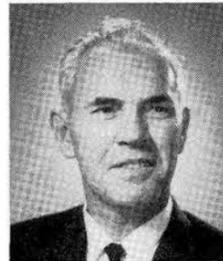
The value of recreation in the socialization process is paramount for all age levels and for practically all persons. Play activity carried on in a group setting tends to stimulate considerable personal interplay and to develop relationships which can be extremely significant, in terms of personality development of the group members. Social communication is very important. Often as individuals become confused and emotionally ill, they begin to withdraw from others and to turn their thoughts more and more into themselves, to become too introspective. As this process continues, they try to reach out to others but often in a bizarre way which may be destructive to relationships. Recreation has a genuine role in providing acceptable social relationships to prevent persons from becoming too introspective.

Occasionally, hobby activities have opened up to individuals new vocational opportunities. Especially important are recreational pursuits to older people. These interests should be developed before retirement from the work to which they may have devoted thirty or forty years. All kinds of personality problems, organic ills, intellectual deterioration, and morale problems can develop in elderly persons who have come suddenly to the point of retirement without having developed a philosophy of true healthy relaxation and the enjoyment of creative use of leisure time.

Jules Masserman, in his contribution to a symposium on the psychiatric aspects of aging, stated, "Obviously, one way to avert the empty loneliness of old age is to develop, while yet young, a versatility of interests, technics, and satisfactions that can be continued through life."

The importance of recreation as a medical adjunct has been firmly established. Recreation has been called the adult's safety valve for pent up emotional pressures and hidden fears. Never underestimate its helpful and salubrious powers. Recreation must be considered as a part of a preventive social and medical approach to the daily life of every individual.

Deaths . . .



Guy E. Moser, a Sandia employee for more than 15 years, died suddenly July 30. He was 43.

At the time of his death, Mr. Moser was a staff assistant in Test Planning and Evaluation Division 1512.

Survivors include his widow, a daughter Sandra Gay, and a brother and two sisters living in California.



Jess R. Adkins, a retired employee, died July 29 in Prescott, Ariz., where he made his home. He was 69.

Mr. Adkins had been with Sandia's Purchasing organization for many years when he retired in 1961.

He is survived by his widow, and three sons—Frank in Albuquerque, Sam in Prescott, and William in Logan, Utah. Burial was in Monticello, Ill.

General Stores Storage, Handling Reorganized; Gives Faster Service

A reorganization of stocks and a new conveyer belt system in the General Stores area of Bldg. 887 is making possible more rapid service to Sandia organizations.

The new system was in the planning and installation stages for more than a year, according to V. A. Southerland, supervisor of Stores Section 4613-2. It has been in operation for two months.

More than 13,000 types of articles are stocked and issued by the Section. These range from pencils and typewriter ribbons to nitrogen gas cylinders and lumber. Three storage areas are used by the Section—the bulk of the material is maintained and issued from the Bldg. 887 ware-

house, flammable liquids and gas cylinders are stored in Bldg. 879, and a fully-stocked lumberyard, including various sizes of pipe plus sand, gravel, and cement, is operated behind Bldg. 887.

During the years, Mr. Southerland explained, the number of items in General Stores gradually increased and stock areas were added to provide storage. Most of the material was kept in the lower floor of the storage area, and a reserve supply was stocked in a mezzanine area above.

The system grew, almost randomly, until it was obvious that stockkeepers were spending a great deal of time going from area to area to fill orders. Various stop-gap reorganizations were tried, but it was obvious that a complete overhaul was necessary.

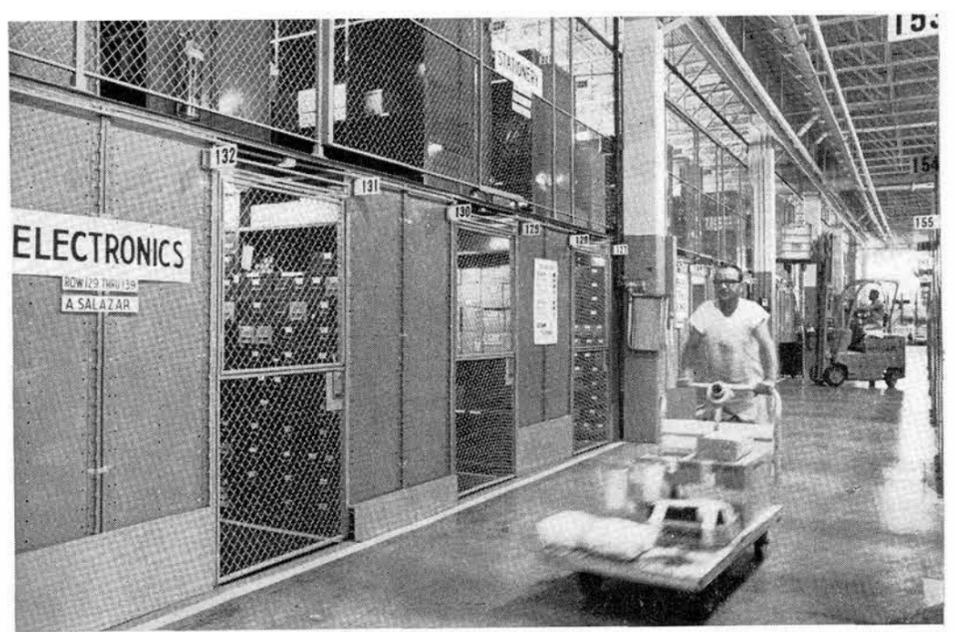
With the help of Plant Engineering Department planners A. L. Gower and C. R. Sandin, Plant Services Department worked out the details of storage arrangement and work flow of the General Stores operation.

Now, all of the 13,000 items in General Stores are classified into different categories, stocked in numbered bins within a storage area specified for each category, and maintained by a single storekeeper responsible for each storage area.

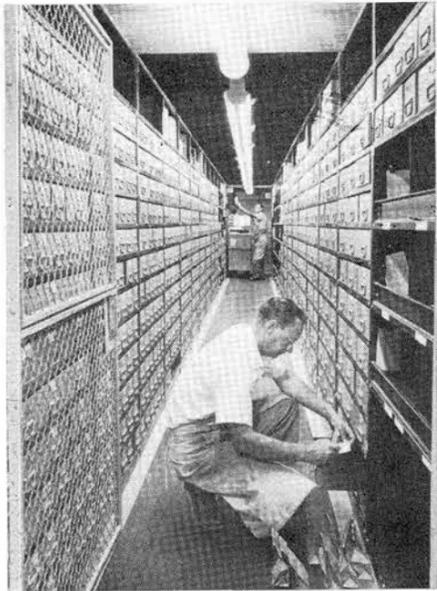
Bldg. 887 storage space was increased from 20,000 square feet to 30,000 square feet by enlarging the mezzanine area.

Orders coming into General Stores are written on forms which correspond to the categories of storage. As the orders are distributed, each stockkeeper pulls the specified items from his area, loads them in plastic containers, and places them on a new conveyer belt system. Four conveyer belts service the storage area. The belts bring the orders down to the shipping area where other stockkeepers assemble the orders and package them for distribution to requesters.

The men service the orders in their categories and maintain their supply of items.



MARIO OTERO wheels a platform cart with incoming material down a large aisle in the reorganized General Stores area in Bldg. 887. In the background, Ray Lucero operates a forklift to put a cart on the upper storage level. Signs and numbers indicate the designated storage areas for individual items.



INDIVIDUAL BINS with numbers corresponding to the General Stores catalog are used to contain the 13,000 items stocked by Sandia. Buford Coleman (foreground) fills orders while Ralph Wenzelburger replenishes stock. This aisle leads directly to the conveyer belt servicing the area.

Each day, the incoming stock is distributed for storage to the stockkeepers. Every item with a General Stores catalog number is stored in a marked bin within its area.

Bulk material and reserve stock is stored in a large area adjacent to the main storage areas and the conveyer belt system. Fork lifts and platform carts move easily within the aisles of the bulk storage areas. Forks lift the material on platform carts to the upper levels where it is wheeled to the appropriate storage areas.

"The reorganization and conveyer belt system has made our job easier," Mr. Southerland says. "There is less physical effort required. Stock moves from area to area quickly. We fill orders rapidly. And the place looks better. Housekeeping is easier. All-in-all, we are well satisfied but, more important, we know our customers appreciate the faster service."



FOUR CONVEYER BELTS service the General Stores storage areas. The belts bring the orders to a central area for final assembly and shipment to the customers. Lamberto Baca unloads the conveyer belt. Alberto Rodriguez is seated at the General Stores issue desk talking with Vic Southerland, 4613-2 supervisor.

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LAB NEWS

AUGUST 13, 1965

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

'59 4-DOOR FORD, \$475. Morgan, 256-7994.
FENDER PRINCETON AMPLIFIER, 12-inch Jensen speaker, vibrator, footswitch, ground switch, \$75. Schildknecht, 299-5540.
DRAPES, antique satin, lined, sand w/pastel floral print, two pair: 94"x61", 94"x84". Randolph, 299-2057.
ROBERSON, \$19,200, 4-bdr., den, carpeting, AC, built-in stove/oven, disposal, large corner lot, landscaped, below appraisal, 11617 Snow Heights NE. Neas.
J. C. HIGGINS 26" boy's bicycle, \$25 or best offer. Martinez, 299-6924 after 5.
10" CRAFTSMAN tilting arbor power saw, 3/4 HP motor, stand, dado set, extra blades; wood car set. Calvery, 255-9545.
8 GIRL'S dresses, size 10; 1 fiesta dress, size 8. Nolan, 265-0066.
MANKIN HOME, 3-bdr., den, 1 1/2 baths, dbl. garage, 1700' living space, \$2800 cash to loan, balance \$17,500. Watkins, 516 Hillview Ct. NE, 298-3667.
TV, Dumont, 27" console, 12" speaker. Murray, 344-5289.
FRIGIDAIRE, 8 cu. ft., white, \$50. Whitfield, 255-5129.
8 MM MOVIE CAMERA, projector and accessories. Pare, 256-9541.
MALE BASSETT puppies, terms if desired; 21" Hoffman console TV in working condition, \$25. Shaw, 299-5557.
'60 4-DR. OLDS 88, R&H, PB, PS, delux interior, below book, one owner, \$995. Asturias, 299-4173.
RECEIVER, Knight R-100A, S-meter-X tal. cal 550KC to 30 MC, \$65. Jenkins, 299-2149.
'63 LAMBRETTA, 4000 miles, \$195, buddy seat, windshield, local maintenance record. Gallo, 298-8572.
KENMORE automatic washer, \$25; 2-wheel trailer, 4'x6' box type w/canvas tarp, \$35. Hayes, 299-1200, after 5 p.m.
LINEAR AMPLIFIER, 500 watts input, two 813's in final grounded grip, power supply included plus spare 813's. Boultinghouse, 298-3458.
3-BDR., 1 1/2 baths, built-in stove-oven, AC, garage, cfa, carpeting, drapes, landscaped near all levels of school, 4304 Hilton Ave. NE. Taylor, 344-8176.
ALL BRICK custom home, less than 2 yrs. old., 1 1/2 bath, family room w/tp. Henneke, 298-4232.
PIANO, walnut spinet, Livingston, \$175. Novak, 298-4052.

NEW SAKO Forester deluxe .243 rifle, Monte Carlo stock, French walnut, engraved trigger guard and floor plate, retail \$246.05, sell \$175. Lucas, 298-5123 after 5:30.
3-BDR., NE, large kitchen and LR, DR, carpeted, AC, dbl. garage, sprinklers, walled back yard, FHA appraisal \$15,000. Stewart, 298-6246.
3-BDR. BRICK, 1 1/2 baths, carpeted, custom drapes, large patio, walled yard, water softener, cfa, \$14,500; '62 TR4, \$1575. Wilson, 298-0049.
DOBERMAN PINSCHERS, AKC registered, 2 females, 14 mos. old, \$170 ea. Foster, 282-3975.
BRICK, 3-bdr., 1 1/2 bath, carpeted, drapes, cfa, AC, sprinklers, landscaped, below \$16,050 FHA appraisal. Lane, 299-9329.
'60 DODGE DART SIX, 4-dr., R&H, \$450. Goen, 268-7521.
'61 T-BIRD, one-owner, white, blue interior, PB, PS, radio, factory air, belts, new tires. Maglitt, 268-7601.
'60 Thunderbird tent trailer, white, butane and 5-gal. water tank, \$300; two car top racks, \$8. \$5. Gilbert, 299-9141.
MODERN 2-story, 2-bdr. home, 1 1/2 bath, 1 acre, Hi-way South 10, accessible to school bus, 35 min. from base. Ginn, 282-3429.
QUARTERHORSE filley, '65 foal. Williams, 282-3379.
'57 FORD HT, 312 Thunderbird engine, \$150 cash; '54 Ford six w/'57 motor, ST, \$125 cash. Louis, 243-1846.
SPROUL NAVAJO HOUSE, 3-bdr., 1 1/2 bath, dbl. garage, Southwest landscaping, 6 yrs. old, carpets, drapes, AC, \$16,500, 5109 Ponderosa NE. Krein, 344-9833.
3-BDR., family room, Coronado Crest, 1 1/2 baths, built-in range/oven, AC, drapes, garbage disposal, landscaped corner lot. Erlwyne, 296-1253.
RIFLE, German single shot sporting rifle, .22 Hornet caliber, walnut cheekpiece, stock, \$50. Smitha, 299-1096.
'62 HARLEY DAVIDSON XLCH, metallic blue and white, 9300 miles, \$900. Sutton, 296-1157.
NE HEIGHTS, 3-bdr., carpet, AC, disposal, walled yard, near schools, sell or trade for North Valley acreage. Samuelson, 298-1663.
SE HEIGHTS, large beamed den, 2-bdr., 1 bath, work shop, trees, for FHA appraisal of \$16,400. Redding, 255-8590.
TWO BEDROOM SUITES; living room suite; pine dining set; apt-size refrigerator; TV; baby bed; stroller; bar-b-que grill; desk. Lambert, 268-8079.
'54 MORRIS auto, recent overhaul. Singleton, 299-1613.
EARLY AMERICAN style platform rocker and sofa-bed, \$35; tank-type vacuum cleaner w/ attachments, \$7; bench-type hassock, \$7. Stone, 298-4620.
'63 PLYMOUTH 4-dr., sedan, 382 cu. in., V-8, stick shift, new tires, R&H, equipped w/electric trailer hitch. Miller, 298-1289.
8 MM MOVIE CAMERA, zoom lens, exposure meter; 8mm movie projector w/zoom lens, both new, \$120. Cahill, 298-6247.
CHROME DINETTE table and matching drop-leaf table, \$10. Hawes, 255-5155.
8-PIECE dining room set, \$100; screen doors; life-size fibreglas Indian in full costume. Laskar, 299-1024.
7-ROOM HOUSE, basement, separate dbl. garage, near University, \$16,000. \$3500 down. Miller, 255-2577.

AQUARIUM, 3-gal. tank, w/undergravel filter, pump, tubing, fish food, thermometer, light w/ reflector, four guppies. Weber, 299-1389.
3-BDR., 1 1/2 bath, dbl. garage, carpeted, drapes, landscaped, sprinklers, AC, patio, many extras, FHA appraisal, \$17,400. Kambourellis, 2914 Jane Ct. NE, 298-2148.
GAS RANGE, \$10; range hood, \$5; kitchen sink, \$2; single bed, \$7. Wagoner, 299-6801.
ROBERSON 3-bdr., 1 1/2 baths, DR, utility rm., fireplace, storage, landscaped, air cooled, less than FHA \$16,100. Jeffers, 299-8124.
'63 FIAT 1100, 4-dr. sedan, \$750. Barnes, 344-6630.
TOOLS: 10" radial arm saw, power band saw, welding equipment. Geilenfeldt, 265-0294.
TWO MOUNTAIN CABIN SITES, good spring, spruce trees, all-weather road, on Pecos River. Collins, 268-3612.
RENAULT; 3 tires; distributor; new grease guns; Argus Autronic 35 mm camera flash attachment, leather carrying case. Sweatman, 265-0300.
GLENWOOD HILLS LOT, approx. 5/8 acre mountain-side lot including access road at top of lot. Neun, 299-9188.
'60 TRIUMPH HERALD, 2-dr. sedan, new brakes, new tires, 27-mpg, \$400; trailer hitch, \$10. Galbreath, 898-0644.
FIVE Ford 16-inch wheels and tires, \$50. Chavez, 299-8194.
2-BDR. HOUSE, dishwasher, hw/floors, walled yard, carport, Belair near Winrock, Coronado, and schools. Evans, 268-8903 after 5.
'57 FORD station wagon, AT, V-8, R&H, \$100. McKeever, 299-2777.
NEAR elementary, junior high schools, 4-bdr., pitched roof, AC, 1700 ft., 1 1/2 baths, \$15,990 FHA, 9221 Shoshone NE. Shummy, 299-2787.
LABELLE slide projector f2.8 lens, \$25. Cundiff, 256-0043.
3-BDR. and den home, DR, utility room, 1 1/2 bath, pitched roof, dbl. garage, AC, priced below appraisal. Tucker, 299-7711.
WORKBENCH BACK, \$2; venetian blind, \$2; tree sprayer, \$1.50; beginner's accordion, \$20; sectional, \$30; 7" power saw, \$10. McFall, 298-1552.
CONN ELECTRIC SPINET ORGAN, 2-keyboard, 12 foot pedals, Funderburg, 344-3710.
'57 FORD 4-dr., AT, R&H, Cannon, 299-4667 after 5.
BSA '62 650cc twin, 15,000 mi, fibreglas saddle bags, new rear tire and brakes, battery, \$700. Ristine, 256-2708.
BOY'S 24" bicycle and girl's 24" bicycle, \$7 ea. Guist, 299-9060.
TRUMPET, Super-Olds, \$75. Chavez, 265-1146.
6.78 ACRES near Mora, N.M., stocked trout stream through property, 3-room, all season home w/ REA, other outbuildings, fenced, clear title. Kubiak, 265-6525.
SPEED QUEEN WASHER, 4 yrs. old, needs timer, \$25. Phillips, 265-0296.
'61 CHEV. pickup, 4-spd., 8-cyl., stepside, new 6-ply tires. McGarvie, 298-3364.
BABY CRIB; expanding gate. Sektman, 298-0373.
WASHER AND DRYER, Westinghouse space-mates, \$50, need minor repair. Dossey, 256-0857.
ARGUS C-44 w/separate attachable light meter, 35mm, f2.8 lens complete w/case, both for \$25. Weir, 299-1160.
TRAVLER 2-speed tape recorder, \$65. Leyba, 2705 Aliso Dr. NE, 265-7065.

SET OF chrome moon full-disc hub caps for 14" wheel, \$10. Tichenor, 298-0192.
'60 FORD Falcon Ranchero, red, AT, R&H. Shelton, 299-8489.
'61 HARLEY DAVIDSON Sportster C. H., recently overhauled. Brooks, 345-0495.
3-BDR., 1 1/2 baths, family rm., dbl. garage, fireplace, AC, carpet, dishwasher, built-in stove, walled, 4 1/2% VA, or FHA, below appraisal, \$16,500. McClelland, 299-0372.
AIRLIFTS type overload coil springs plus extra bags, fit most cars, \$17.50. Martin, 256-6785.
LARGE INDIAN water colors, framed, 20x20", \$10/ea; Japanese ginger jar lamp, new \$50. Pope, 816 Val Verde SE, 255-6702.
REGISTERED Bassett puppy. Shinnick, 268-0240.
TENT, delux station wagon type but can be used free-standing, Mont. Wards 9 1/2' x 9 1/2' w/ aluminum exterior frame, cost \$90, used once, sell \$55. Miller, 268-9381.
CAMPER (cab over), sleeps 4, mounted on '56 V-8 Dodge, 4-speed, AC, sell as one unit. Young, 255-8193.
1/2 HP electric deep well pump w/20-gal tank, list price \$130, sell for \$75. Cooper, 877-4674.
'62 MERCURY custom V-8, Meteor, PS, PB, 30,000 mi., \$1150; Four Hills tri-level, 4-bdr., and den, 2 1/2 baths, \$32,900. Law, 298-0287 evenings and weekends.
VOLKSWAGEN MICROBUS trailer hitch, \$10. Velasquez, 299-5904.
3-BDR. BRICK 1 1/2 baths, near base, 1104 Kentucky SE. Schatz, 255-2854.
1/2 ACRE CABIN SITE at Vallecito Lake, Colo., small stream, electricity and piped water, \$2000, terms, Tucker, 877-1140 after 5.
SIX PASSENGER '61 VW double cab pickup, holds entire family as well as camping baggage, snow tires all around, gun racks, \$995. Baxter, 344-7601.
MOWER, rotary, 20", 2 1/2 hp, w/catcher, \$18.95; Fairchild turntable, arm and cart, \$48; McIntosh stereo 120 w, amplifiers and other stereo equip. Browning, 299-6384.
SELMER CLARINET, prof. mod. Hurley, 256-0746.
PUPPIES, mostly Bassett, mamma AKC registered, \$25. Price, 2932 Maderia NE, 268-5803.
'64 VESPA motor scooter, 2700 miles, windshield and spare tire, original cost, \$450; sell for \$225. Ray, 298-0408.
'38 SP. COLT Officer Model revolver, \$65; 16 ga. Rem. Auto Sportsman Mod. shotgun, \$60. Larsen, 255-6407.
NITROMETHANE by Francisco Labs, \$6/gal., or \$2/qt. Svensson, 344-7700.
'58 CHEVROLET 1/2-ton pickup, 3-speed, \$550; saddle, \$75. Puccini, 255-0568.
'60 FORD CONVY., red and white, R&H, PS, PB, 8110 Fruit NE, West, 268-6464.
POINTER, GERMAN shorthair, combining pheasant and quail bloodlines, bred to hunt, reserve now for pick of litter. Tessler, 296-1025.
AFRICAN BERMUDA FREE, for the digging; mobile H.F.-CAP radio, complete, \$30; TV, 21" blond console, \$20. Pliner, 6210 Bellamah NE, 256-1907.
\$1000 will buy \$18,500 NE 3-bdr. home or trade \$2300 equity for small home. Roberts, 255-6668.
'56 DODGE CORONET, R&H, 4-dr., V8, AT, white sidewalls. Tischerhauer, 242-1906.
'59 PEUGEOT sedan, w/extra spare wheel and tire, \$425. Fife, 282-3206.

'56 FORD Fairlane V-8, Fordomatic, 4-dr., \$225 or best offer. Smith, 243-3292 after 5.
MATTRESS AND BOX SPRING, \$25; youth bed complete w/side rails, \$20. Padilla, 298-0460.
'51 PONTIAC 2-dr., 55,000 actual miles, \$250 or best offer. McKinley, 268-4779.
FREE PUPPIES, small Collie type; also full grown female Collie, housebroken, good w/ children and good watchdog. Stixrud, 298-0478.
'58 ZUNDAPP MOTORCYCLE, 250cc, two-cycle, w/helmet, extra set of tires and other accessories, Tassia, 511 Utah SE.
MOVE IN FOR \$850, 3-bdr., den w/fireplace, carpet, large lot, FHA appraisal \$24,000, selling for \$22,850, Bellehaven area. Cutchen, 299-1136 after 6.

LOST AND FOUND

LOST—Keys on ring w/VW key, manicure scissors, chain-link mud grip. LOST AND FOUND, tel. 264-2757.
FOUND—Lunchbox w/handle, 10-yr. SL anniversary pin, white bathing cap w/blue flowers. LOST AND FOUND, tel. 264-2757.

FOR RENT

HOUSE, neat 2-bdr., garage, walled, lots of shade, between Winrock and Coronado, near all schools, \$80/mo, water and garbage paid. Regan, 256-0284.
2-BDR., den, fireplace, carpets, drapes, wall, near Coronado, newly painted, adults preferred, pets welcome, \$95/mo, available end Aug. Kern, 265-1042.
3-BDR. BRICK, pitched roof, patio, drapes, large lot w/shade trees, partly furnished, \$130/mo. Moody, 282-3466.
3-BDR. HOUSE, walled yard, AC, near parochial and public schools, NE Heights, Meahl, 282-3681.
2-BDR., AC, furnished apt., washer rough in, tub and shower, no pets, two children acceptable, \$90/mo. Villella, 268-4731.

WANTED

SHARE-THE-RIDE car pool from Girard NE to Bldgs. 800-814. Hensinger, 265-4203.
RIDE from Tijeras to Area III. Flowers, 282-3458.
5-MAN bowling teams (hdcp) 825 max. team avg. for Sandia T-Bird hdcp. league on Fri. 6:30 at Holiday Bowl. Tichenor, 298-0192.
12 or 14' aluminum boat w/small motor. Geilenfeldt, 265-0294.
SHARE RIDE to Bldg. 892 or 880 from vicinity immediately east of Menual and Louisiana. Devor, 298-9745.
TRADE 24" boy's bicycle for 24" girl's bicycle. Arming, 256-9229.
VOLKSWAGEN, must be bargain. Chavez, 298-5091.
RIDE or join car pool from Carlisle and Aspen to Bldg. 838. Hawes, 255-5155.
HOUSEKEEPER, cook, baby sitter, live in. Brint, 299-1644 after 6.
SHOTSHLL LOADER 12 ga. Fedzuga, 344-7700.
CHILD CARE in my home SE heights, children up to 3 yrs. old. Bartlett, 268-6138.
BUYERS to divide 65-acre tract, N. Hwy. 10, into select 5-acre residential sites. Plumlee, 282-3224.
USED TRUNK or one or two foot lockers. Parman, 282-3447.



AID CUSTOMERS—Salvage Yard sales representatives are on hand every weekday noon hour to help customers find specific items. The white helmets with Thunderbird insignias are easily spotted among the crowd of 200 which visits the yard daily. In front is Samuel Lopez. Others are (from left) Don Tyson, Joe Silva, Joe Dominguez, Herman Kirby, and Jim Connally.

Bargain Buyers Bring Brisk Business To FY '65 Sandia Salvage Yard Sales

Business is brisk at the Sandia Salvage Yard.

As Fiscal Year '65 closed last month, sales for the year totaled slightly more than \$100,000, up more than 20 per cent from FY '64.

An average of 200 persons visit the Salvage Yard during the noon hour each weekday. When the gates open at 12:10, they look for a bargain among the bins of electronic equipment, hardware, scrap metal, office furniture, plumbing fixtures, and hundreds of other items on display in the yard.

As Don Tyson, Salvage Yard lead man, says, "Every day is like a sale at Macy's Basement."

Indeed it is a sale. The Salvage Yard is where Sandia Corporation disposes of just about everything of an unclassified nature that it no longer needs, uses, or can economically repair. It's a reclamation plan that seems to operate to the mutual benefit of everyone concerned.

"It's our job to sell all the surplus used material we can," explains J. A. Christopher, supervisor of Receiving, Classification, and Disposal Section 4622-1, which operates the Salvage Yard. "We get the highest possible return, while the customer gets something he wants at a fair price. Sometimes he couldn't get it anywhere else."

All of the items placed in the yard are first screened by Reclamation Division 4622 to insure that it is of no further use to Sandia. Weapon components, classified materials, and certain metals are pulled out, since their sale is forbidden by government regulations. Finally lists of surplus

equipment are also circulated to AEC contractors, other government agencies, and the Department of Health, Education, and Welfare for their consideration before offering equipment for sale to the public.

All items in the yard are priced at less than \$100. Equipment worth more than \$100 is sold on a formal or informal bid basis.

"Sooner or later, just about everything passes through here," says Mr. Tyson, adding that a motorboat and outboard motor were once sold by the yard back when the company was operating Salton Sea Test Base.

Best-sellers at the salvage yard are electric motors, typewriters, pumps, power and electronic equipment, tape recorders, film, and office furniture.

Much of the salvage yard business comes from school and church groups, people building their own homes, persons "just browsing," and students. "A lot of kids come here to pick up things for their Science Fair projects," Mr. Tyson says.

The Salvage Yard is open to the public from 12:10-1 p.m. each weekday, except holidays, and people travel great distances just for a look-see. Mr. Tyson said one of his regular customers is an old gentleman from Espanola who drops by once a week.

Even tourists on vacation have been known to stop in for a look around.

Combined, they make up the daily crowd of about 200 at the yard. They all have two things in common—they're bargain hunters and they leave with a load of "stuff" tucked under their arms and a satisfied smile on their faces.

Safety Shoes Prevent Serious Injury in Power Mower Accident

Don Eiler (4632) was limping slightly last week.

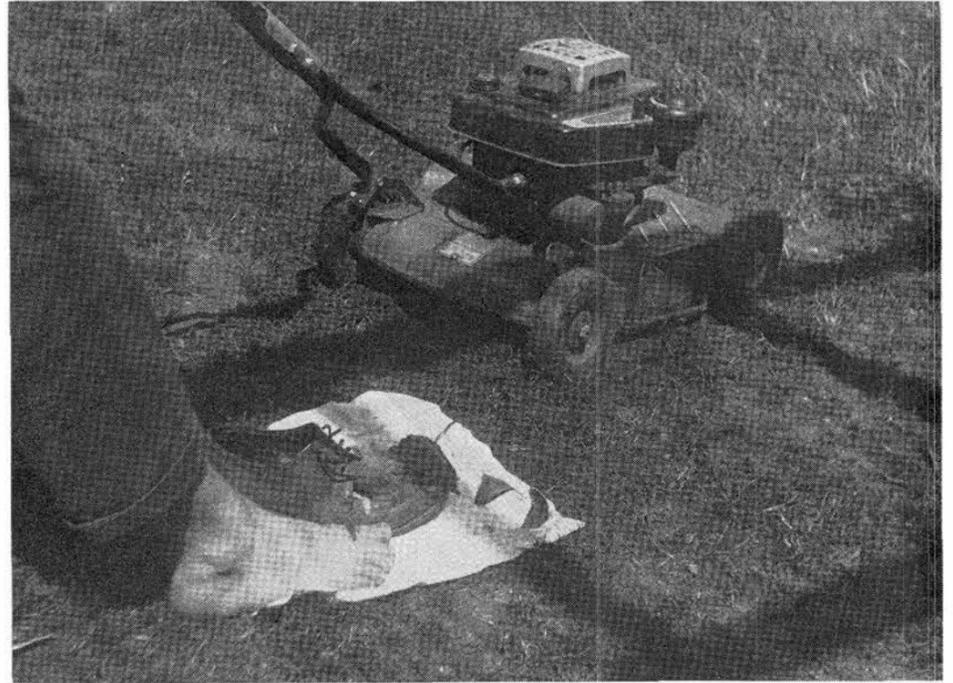
"I'm lucky to be able to walk," he says. "I wear safety shoes all the time at Sandia, and if I hadn't been wearing them while mowing my lawn last week I'd probably have lost some toes and part of my foot."

Don was mowing his lawn last Sunday morning using a gasoline powered rotary mower. As he moved along, he noticed a spot of grass that he missed. He backed up to get the spot, fell backwards over a stack of blocks, and pulled the lawn mower up over his right foot as he fell.

The mower ripped into the safety shoe, tearing the steel toe protection plate out and chewing it in half.

Don's foot was cut and bruised. It was sore for a week.

"But it's OK," he says. "While I was at the hospital emergency room, I saw two other guys who had accidents the same morning with power mowers. One of the men lost four fingers and the other will probably lose part of his foot. You can be sure that I'll continue to wear safety shoes and treat that mower like the deadly weapon it is."



ACCIDENT AFTERMATH—Chewed-up safety shoe, cut and bruised foot, and lawnmower tell the story. Without the safety shoe, Don Eiler would have been seriously injured during a fall while mowing his lawn with a gasoline powered rotary mower.

State Fair Means Work for Some — Honor for Others

The 1965 New Mexico State Fair is held Sept. 16-26, but the entry dates for the various events begin in mid-August.

Several Sandians will be in charge of major events. J. R. Dickinson (7252) will be superintendent of Department C—Horses; J. D. Shreve (5234) will be superintendent of Department F—Dairy Goats. Both men will also be in charge of junior entries of the same animals.

L. R. Hassebroek (2241) is superintendent of Department T—Photography, and C. M. Clendenin (9411) is in charge of Department 17—Boy Scouts.

The deadline for entries: Aug. 19, horses, cattle, goats, sheep, wool, swine, poultry, rabbits; Aug. 26, contemporary crafts; Aug. 28, art; Sept. 13, home arts, canning, hobbies; Sept. 14, tropical fish.

Sept. 15, cutting horses, small cakes, breads, cookies, Y-Indian guides; Sept. 16, rodeo, agricultural products, 4-H project exhibits; Sept. 17, field crops; Sept. 18, FFA booths, 4-H booths, junior agricultural products; Sept. 22, cakes and candies.

Welcome Newcomers

July 26 - Aug. 6

Albuquerque	
*Yolanda M. Adent	3126
Mary M. Ames	4613
*Robert A. Benham	7325
Brian C. Brock	5142
*Patricia A. Childers	4613
*Charles J. Davis	4512
Sharon K. Geister	2554
Virginia H. Hagen	4352
*Janet L. Jenkins	3463
Tony D. Jojola	4574
*Carol R. Kaemper	3126
*Dorothy C. Newton	3428
Betty L. Perkins	3126
Arizona	
Floyd L. English, Tempe	5142
Colorado	
Douglas O. Schuler, Denver	1000
Illinois	
Leonard V. Hansen, Chicago	5212
Missouri	
Thomas L. Plummer, Kansas City	4542
New York	
Robert C. Waag, Ithaca	5141
Oklahoma	
William W. Rahhal, Duncan	4121

*Denotes rehire

Sympathy

To Frank Alexander (2514) for the recent death of his mother-in-law.

To Willie Servis (3421) for the death of her father in West Point, Miss., July 22.

To James S. Reese (2452) for the death of his father in St. Louis, Mo., July 4.

To Thelma Carpenter (4500) for the death of her husband Aug. 5.

Sandia's Safety Scoreboard

Sandia Laboratory:

46 DAYS
1,614,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:

57 DAYS
289,600 MAN HOURS
WITHOUT A
DISABLING INJURY



AWARD OF HONOR—The National Safety Council recently awarded Sandia Laboratory employees a plaque for their achievement of 5,010,000 man-hours worked without a disabling injury. This number of continuous man-hours worked without a lost-time accident was from Feb. 13 to June 25, 1965. R. B. Powell (right), Vice President 3000, admires the award with A. B. Banks of Safety Education Division 3212.