



SNOWED—Tremendous response to the call to purge files resulted in this accumulation in Bldg. 810. Some 5000 cubic feet of records were removed from Laboratory files. In foreground are Neil Hansen, left, and Bill Scott of Records Management Division 3428 who were instrumental in conducting the clean-out campaign.

Sandia Clean-Out Effort Results In 5000 cu. ft. of Purged Records

Throughout Sandia Corporation last week, thorough effort purged more than 5000 cubic feet of records from office files and storage. It was a tremendous response to an appeal by President Johnson and the Atomic Energy Commission to reduce the cost of maintaining stored records.

At Sandia Laboratory packed boxes were taken from offices to the central reception area in Bldg. 810. Men of the Motor Pool, Box Shop, and Material Handling Division contributed much to the effort.

In the offices, secretaries and staff pored over files to separate the essential from

non-essential. Following the guidelines issued by President Hornbeck, and the detailed instructions from Max Linn (3400), coordinator of Sandia's campaign, classified material was marked for destruction and office reference material was removed to the Central Technical Files.

"Everyone cooperated," Bill Scott, supervisor of Records Management Division 3428, said, "and we can all be proud of the effort. The results far exceeded our expectations. In addition to the savings

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SANDIA LAB NEWS



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SANDIA LABORATORIES ALBUQUERQUE, NEW MEXICO OPERATED BY SANDIA CORPORATION FOR
LIVERMORE, CALIFORNIA THE U. S. ATOMIC ENERGY COMMISSION

1st Place in National Fire Prevention Contest Won by Sandia Laboratory

Grand Award in the 1966 National Fire Prevention contest was earned by Sandia Laboratory. Sandia's fire prevention program, as conducted by Field and Plant Operations Engineering Division 4544, was judged the best of the 151 American and Canadian entries in the industrial division in the annual contest sponsored by the National Fire Protection Association.

Judging was based on entry form data, supported by a scrapbook of fire prevention activities. Sandia's program included continuous inspection of all buildings and facilities, regular tests of all sprinkler systems and fire extinguishers, periodic training of the fire team in each building, fire drills and fire extinguisher demonstrations involving all employees, a continuing fire prevention education campaign, and Fire Prevention Week activities.

Ward Hunnicutt, Division 4544 supervisor, directs fire prevention activities at Sandia. Fire prevention engineers and inspectors include R. W. Cohrs, J. C. Snowden, V. L. Duke, and W. L. Smith.

Division 4544 is supported in fire prevention activities by Electrical Systems Section 4511-1 under V. J. Domme. The sprinkler system mechanics include J. A. Woelhart, A. L. Metzgar, and J. P. Sanchez. Tom Silva is the fire alarm electrician and J. J. Schenck is fire extinguisher mechanic.

"Sandia's annual damage from fire is considerably below the national average for comparable facilities," Mr. Hunnicutt says. "Last year the Laboratory had nine fires which caused an estimated \$3272 damage, with about half of this amount coming as the result of one fire that destroyed a motor pool truck.

"In 1965, we had five fires resulting in \$717 damage, in 1964 three fires—\$220 damage, and in 1963 nine fires—\$661 damage.

"We attribute this record to our continuous campaign for fire prevention and the interest and cooperation of employees and management in supporting our efforts and being alert to possible fire hazards."

This is the first time the Laboratory has won the National Fire Prevention contest's grand award. Sandia finished fifth in 1964—its previous high record, and was 13th in 1965.

This year's prize was gained in competition against some of the largest firms in industry. The Los Angeles Assembly Plant of Ford Motor Company finished second and a DuPont plant was third.

Jim Walston of Technical Art Division 3463 prepared the scrapbook entry. In addition, he contributed a series of fire prevention posters to the educational campaign of Division 4544.



GRAND AWARD in the 1966 National Fire Prevention Contest was won by Sandia Laboratory. Reviewing scrapbook are, from left, Jim Walston (3463), technical artist who prepared the entry; Ward Hunnicutt, Division 4544 supervisor; and Ray Cohrs, fire prevention engineer.



FIRE PREVENTION PEOPLE—Part of the group which shares responsibility for Sandia's prizewinning fire prevention program display some of the posters used during the year. From the front are Walt Smith, Vern Duke, and John Snowden of Division 4544; John Cruickshank, AEC/ALO fire protection engineer; and Joe Goodman, Assistant Chief, Sandia Base Fire Department.

Today is Deadline for Choice

Most Sandians Are Selecting Variable Annuity Option, Retirement Income Plan

Today is the deadline for employees to make their selection concerning the Variable Annuity Option of Sandia's Retirement Income Plan.

As of Wednesday morning (SANDIA LAB NEWS press time), 4998 employees had sent in their cards. Of these 4304 elected the Variable Annuity Option.

All employees must send a "Variable Annuity Election" card to Division 9412 indicating either no variable annuity or their choice of 25 percent or 50 percent variable annuity option with or without conversion.

For those who wish to delay the decision, another enrollment will take place next year. However, the current period is the

only one in which the election to convert past accrued annuities can be made.

Employees, who have mislaid their cards or who wish to change a card already submitted, may obtain cards from Employee Benefits Division 3122, Bldg. 832. But, today is the last day to submit or send a card.

A number of employees have expressed interest in knowing the companies whose common stock or convertible bonds are purchased by Prudential's Variable Contract Account Investment Fund (which will now include Sandia variable annuity funds). The shares and market values with the names of the companies are published quarterly by Prudential. Employee Benefits Division will receive copies of this report.

As of December 1966, Prudential's "Schedule of Investments" listed these companies by category: **Aerospace:** The Boeing Company, United Aircraft Corporation; **Air Lines:** American Airlines, Inc., Pan American World Airways, Inc., United Air Lines, Inc.; **Apparel:** Bobbie Brooks, Inc., Jonathan Logan, Inc., Kayser-Roth Corporation, Vanity Fair Mills, Inc.; **The Warner Brothers Co.; Automotive:** Ford Motor Co., General Motors Corp.; **Building:** Carrier Corp., Georgia-Pacific Corp., The Sherwin-Williams Co., U. S. Plywood Corp., Weyerhaeuser Co.; **Chemical:** Celanese Corp., FMC Corp., W. R. Grace & Co., Hercules Inc., Int'l Minerals & Chemical Corp., Monsanto Co., Union Carbide Corp.;

Container: Owens-Illinois, Inc.; **Drug and Cosmetic:** Avon Products, Inc., Chesebrough-Pond's Inc., Chas. Pfizer & Co., Inc., Plough, Inc., Smith Kline & French Lab., Warner-Lambert Pharm. Co.; **Elec. & Electron. Prod.:** AMP Inc., Emerson Electric Co., The Foxboro Co., General Electric Co., Honeywell, Inc., Motorola, Inc., Radio Corp. of America, Texas Instruments, Inc., Westinghouse Elec. Corp., Whirlpool Corp., Zenith Radio Corp.; **Food Products and Soap:** The Borden Co., California Packing Corp., The Coca-Cola Co., Corn Products Co., General Foods Corp., General Mills, Inc., PepsiCo., Inc., The Procter & Gamble Co.;

Machinery: The Black and Decker Mfg. Co., Caterpillar Tractor Co., Clark Equipment Co., Ingersoll-Rand Co.; **Metal—Non-Ferrous:** Aluminum Co. of Amer., The Int'l Nickel Co. of Canada, Ltd., Kaiser Aluminum & Chem. Corp.; **Office Equip-**

(Continued on Page Four)

Patent Issued on F. A. Goss Detonator



A patent for a multi-signal explosive detonator has been issued to the Atomic Energy Commission in the name of Frank A. Goss, Jr. (1312).

The objective of this invention is to make a safer electro-explosive system.

Normally, a transistor is designed to conduct heat away from the main junction. When a transistor is operated beyond its design parameters, it undergoes a thermal "runaway"—resistance will decrease, more current will flow, and temperatures at the junction will increase.

The design of the detonator intentionally violates normal transistor design objectives in that efforts are made to use the temperature increases of a thermal runaway.

With the control electrode at zero, the energy signal can be applied and there will be no flow of current nor will the explosive device function. If the energy signal is not applied, application of the control signal alone will produce no action.

It is only when the two signals are simultaneously applied that the failure mode will produce a rapid dumping of energy and the temperature increase will initiate the explosive.

The patent is number 3,292,537.

Editorial Comment

An Insight to World Affairs Through 'Great Decisions'

"I let the wife make the little decisions about where to live, what car to buy, and how we'll spend our money. But I make the big ones on what to do about Red China, how to win the war on hunger, and our course of action in Vietnam."

A new twist to an old joke. But since 1959 "ordinary" citizens in New Mexico have been making decisions — their own decisions — on the course of America's foreign policy.

They are participating in the national program called "Great Decisions." The framework of the program consists of small, informal groups which meet during February and March to discuss eight topics of international importance.

Following the discussions, group members may submit opinion ballots which are correlated and sent to the State Department and our congressmen.

Even more important than these ballots, are the effects of the discussion on the participating individuals.

These people are now better informed. They are interested. They are aware of the background as well as the current status of world problems which affect U.S. foreign policy. What they hear and read in local and national news media is more meaningful.

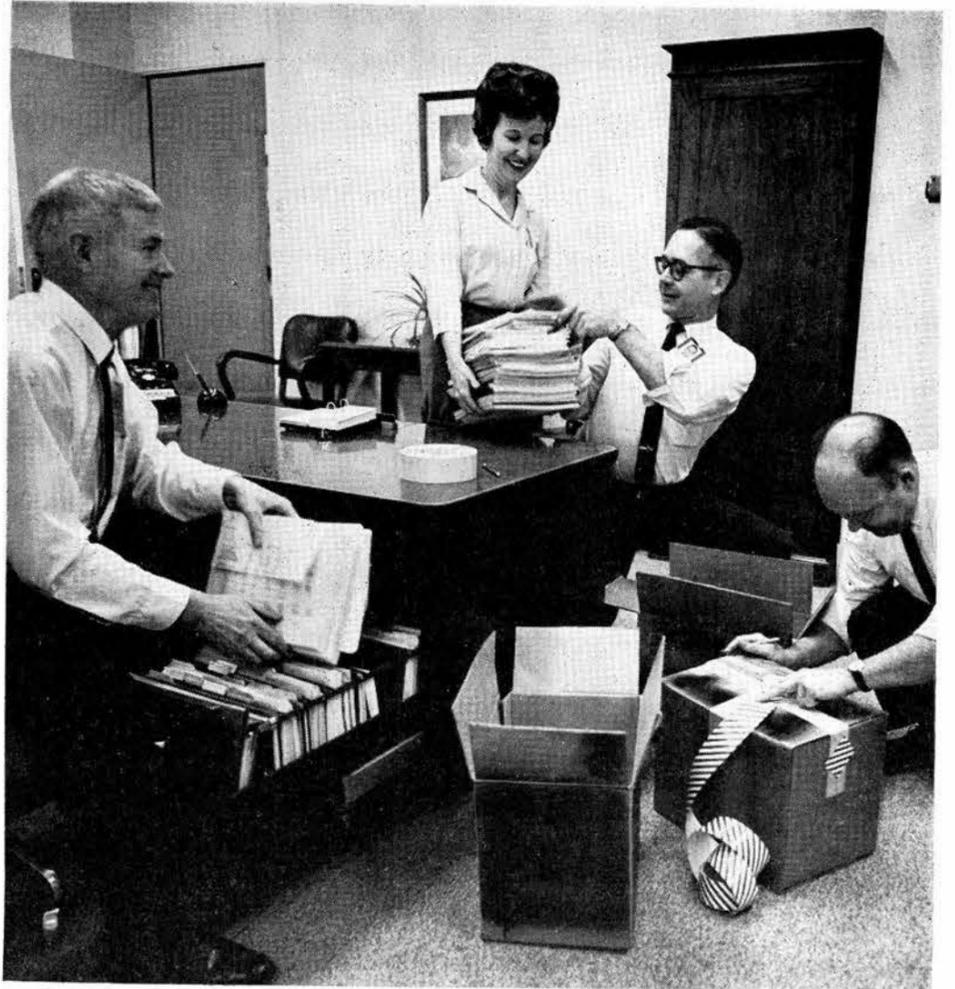
Through the years, participants have examined a wide range of topics which continue to influence their understanding of current issues and events. For example in 1960 "Cuba's Revolution—reform or fiasco?" was one of the discussion topics—a year and a half before the missile threat focused nationwide attention on the Cuba-Russia alliance. In 1961, France was a topic. In '62, Vietnam—then a country familiar to relatively few Americans. In '63, the seriousness of the Russia-Red China schism was explored. In '64 Indonesia was under scrutiny—laying a basis for understanding the 1966 rebellion in that nation. In '65, South Africa received attention, and when Rhodesia resisted British mandates it came as no great surprise to Great Decision participants. Last year's "Israel in the Arab World" discussion prefaced current headlines of the Israeli-Syrian turmoil.

Year after year the topics of Great Decisions gain more meaning and impact as new crises arise from old conflicts . . . as the present evolves from the past.

Nor are topics limited to geographic areas. Groups have discussed such issues as "U. S. Global Strategy," "Arms and Survival," "Blueprints for World Economy," "The United Nations," "Peace—What Problems and Prospects," "World Communism," "Disarmament," "Ideological Warfare," and "The Population Boom."

Since World War II, America has ceased its isolationist policies and has become increasingly involved in world affairs. As citizens of this nation it is our duty to be well-informed on world affairs. Only then can we intelligently elect our leaders and endorse or object to their policies.

Participation in the Great Decisions program is one of the ways that we can strengthen our knowledge of the foreign affairs that affect our lives.



CLEAN-OUT DAY Jan. 18 found office staffs throughout the Laboratory purging filed material. This group in Bldg. 892 is typical. From left are Joe Landrum (3452), Jo Sena (1420), Jim Gravlin (3452), and Bob Higgins (3452).

Continued from Page One

Clean-Out Day Success

in filing space achieved, office efficiency and appearance should improve."

Early results from Office Equipment and Repair Division 4516 which received emptied file cabinets indicate that 33 large cabinets, five 20-drawer tab card cabinets, six space-finder cabinets, and three book cases were received. More equipment is expected as the purged files are consolidated.

The clean-out campaign will continue through the end of January. Although the "big effort" of Jan. 18 will not be duplicated, more material is expected to be received in the central storage area.

"Our thanks to all those who helped," Bill said, "particularly the service groups, security personnel, and secretaries."

About midway through "Clean-Out Day,"

there was a shortage of storage boxes provided for the purged materials. Sandia's Box Shop, which had provided more than 4000 cardboard boxes for the effort, quickly prepared 1000 more. In the meantime, men of Division 3428 started emptying the boxes in Bldg. 810 for recirculation.

"Sandians made it a general clean up," Bill said. "We found everything from 1950 phone books to magazines and catalogs. There was a large amount of classified material which will keep our security incinerators busy for several weeks."

One of the men who helped empty boxes—Howard Warden—was rewarded in an unusual way for his efforts. He found a \$500 confederate bill.

Sympathy

To Louis Yannoni (4622) for the death of his father in Albuquerque, Jan. 15.

Tax Forms Available

Need extra tax forms?

The forms for both federal and state income taxes are available to employees from Employee Services Division 3121, Bldg. 610. In addition to the basic 1040 form, Division 3121 has available other schedules for any special tax reporting.

SANDIA LAB NEWS



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EVERYBODY HELPED in the clean-out campaign which resulted in 5000 cubic feet of records removed from Sandia files. The material was collected from every organization in Sandia and brought to Bldg. 810 for final disposition—destruction or transfer to central files.

LIVERMORE NEWS

Livermore School Building Plans Helped by Network Analysis Method

Parents of Livermore grade school children are familiar with the expressions "double session" and "porta-huts." These words came into vogue several years ago when school construction could not keep pace with the expanding Livermore population.

Assuming a community needs a new school, how long will it take to acquire the land and complete the building?

These and other questions have now been answered for the Livermore School District through network analysis—sponsored by the Livermore Valley Technical Panel for Community Service.

Recognizing the building problems facing the School District, J. F. Sladky, a member of the Board of Education and the Panel, contacted Robert H. Johnsen (8143), also a member of the Panel, to determine if his experience with the network analysis technique could be applied to school construction planning.

Remembering the "critical path" approach to the logistics problems on Project Dominic in 1962 and other successful applications at Sandia, Bob agreed that the technique could prove helpful in Mr. Sladky's situation.

Bob and Mr. Sladky, with the help of Herman Mettler, Director of School Construction, proceeded to define each significant administrative activity that takes place before school buildings are ready for occupancy. It took them an evening each week for about two months to analyze and interrelate these activities. Once the analysis was complete, the data were turned over to Mrs. Elaine Brint (8161) who, as a Critical Path Analyst, prepared the drawings necessary to give a graphic representation of the entire program.

A network analysis shows the relationship of each activity to all other activities in a given project. It also shows the expected time required for completion of each activity. When all of the various activities that must be accomplished to meet the completion of the project are shown, the longest time path is traced through the plan. This is the "critical path" which controls the project. As a result, planners are aware of all the critical elements and can take steps to assure that these activities are completed according to schedule.

In the school construction project, the first seven months' activities advance from determination that a school is needed to the approvals required for the selection and purchase of a specific location. Development of supporting data for the recommendation of a specific site location becomes the critical path in this event because the recommendation must be approved by the Board of Education, the

State Division of School Planning, and the State Division of General Services.

If approved, the next year, and a half will be spent on two activities conducted simultaneously—acquiring the land and developing architectural plans for school construction. At this point, obtaining the land could be the critical path. Providing the property matter is settled and the State and Federal agencies have approved the plan for school construction, the project can move forward.

The next year will be devoted to the construction of the school. This, then is the critical path for this phase. Bids are collected and sent to the County District Attorney (for low bid legality) and to the State Division of General Services (for review and approval). Contracts are also prepared and approved.

Two and one-half years of planning, justifying, designing, and approving will have now reached a culmination point.

Contractors will spend about ten months building and preparing the school buildings for occupancy.

Over three years of administrative and construction effort will have gone into a new Livermore District school.

Just how does the network analysis technique help school construction planners?

According to Bob Johnsen, "It lets them see at a glance the importance of any single activity to the overall objective. As a result, their time can be effectively used to concentrate on the 'now' phase of a highly complex operation."

It is also proof that volunteers from science, engineering, mathematics, and other technical fields can extend their professional skills to community service.

In a letter to the Panel, Dr. Peter Bancroft, Superintendent of the Livermore Valley Joint Unified School District, states that the network analysis "program is currently being used as a bench mark for the development and planning of various activities within the education and business divisions of our District."

Congratulations

Mr. and Mrs. Ed Watchempino (8233), a daughter, Jennifer Lynn, Jan. 15.

Sympathy

To Bob Facer (8118) for the death of his mother-in-law in Phoenix, Ariz., Jan. 11.

To "Whitey" Sorensen (8127) for the death of his father in Livermore, Jan. 10.

To Joan Maffey (8241) for the death of her father-in-law in San Jose, Jan. 2.



WEARING MINE RESCUE EQUIPMENT, three trainees emerge from a smoke-filled box car. The three men (l to r), R. L. Samuelson (LRL), H. A. Zenger (8255), and G. G. Bennett (8233-1), learned to use and maintain the equipment during a U.S. Bureau of Mines course sponsored by LRL's Hazards Control organization. The gear will be used during tunnel re-entry operations at Nevada Test Site.

Sandians Certified to Use Mine Rescue Equipment in Underground Operations

Two Livermore Laboratory employees, H. A. Zenger of Safety Engineering Division 8255 and G. G. Bennett of Photography Section 8233-1, recently completed an in-hours course in the use of mine rescue apparatus. As a result, they have been certified by the U. S. Bureau of Mines to use this equipment in underground operations.

The course was sponsored by the Lawrence Radiation Laboratory Hazards Control organization as part of its responsibility in safety education and readiness, specifically involving tunnel re-entry operations to recover test samples and instrumentation data at the Nevada Test Site.

E. F. Allen of the San Francisco Area Office of the Bureau of Mines taught the 20-hour course at LRL in Livermore, four hours a day for one week.

Attendees were trained in both the use and maintenance of the McCaa two-hour apparatus, one of several types of portable, self-contained, breathing apparatus now being used extensively in this country. A self-contained, breathing apparatus is the only device that will protect the wearer against contaminated air, regardless of the concentration, and in atmospheres containing less than 16 percent oxygen.

Underground operation conditions were simulated for the course by filling a railroad box car with smoke supplied by burning wet hay in an old-fashioned, wood-burning stove.

The McCaa two-hour apparatus supplies oxygen from a small steel cylinder or bottle to the wearer, and by means of a chemical (cardoxide) which absorbs the exhaled carbon dioxide, purifying the air for re-breathing.

To be certified by the Bureau of Mines, a person must fulfill a health requirement and be under 50 years of age, in addition to completing the course.



Barbara J. Combs (8235)

Take A Memo, Please

Many disabling injuries are the result of people falling. To help prevent a fall, remove tripping and stumbling hazards in your work area.

Livermore Notes



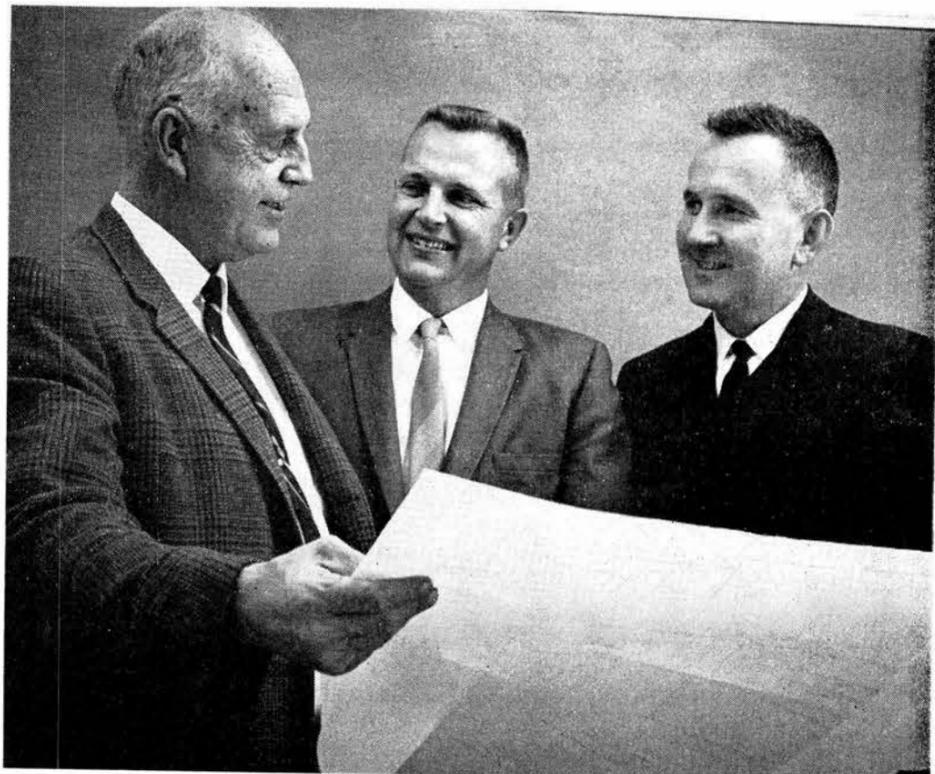
SWEEPSTAKES WINNER Walter Ghio (8252-5) holds one of the six planes he fielded in the 20th Annual Model Airplane Show at Bakersfield. By winning four or more events in his class, Walter finished as a sweepstakes winner among 250 entries in both gas-powered and rubber-powered models. The show was held under the auspices of the Academy of Model Aeronautics, national association for model flyers.

Marlin Pound, supervisor of Training, Benefits, and Records Division 8214, will address a dinner meeting of the Southern Alameda County Personnel Managers Association on Feb. 2. He will discuss Sandia's role in the Atomic Energy Program, the Company's personnel policies and practices, and show "The Sandia Story" film.

Following Marlin's presentation, Jim Henderson, also of Division 8214, will explain the pre-retirement counseling program at SCLL.

Discount tickets for Friday, Feb. 3, are available to SCLL employees for the San Francisco National Sports and Boat Show at the Cow Palace, Feb. 3-13. New features at the show this year will be a display of "Radio Controlled Mini-Boats" and a "Boating on a Budget" exhibit of boats priced under \$500. For tickets contact Employee Benefits.

Reserved seat tickets at discount rates are available to SCLL employees for the Feb. 21 evening showing of the motion picture "Hawaii" at the Coronet Theater, Geary Boulevard and 1st Avenue, San Francisco. Tickets on a first-come, first-served basis can be obtained from Employee Benefits.



PLANNING HELP—With network analysis techniques, Livermore Technical Panel members help Livermore schools in programming new construction. Reviewing "critical path" are (from left) Herman Mettler of the Livermore School District, R. H. Johnsen (8143), and J. F. Sladky, Coast Manufacturing and Supply Co., members of the Livermore Technical Panel.



INDUSTRIAL PHOTOGRAPHY Magazine's 1966 "Indy" award was presented to Sandia for the "Environmental Testing at Sandia" film. Cameraman/editor for the film was Bill Mahaffey (left); writer/director was Harvey Frauenglass, both of Industrial Photographics Division 3465. The motion picture was one of six films that won the Indy award in the research and development category of the eighth annual national competition.

Take Note



ECP GIFT—A 4100 organization surplus Christmas party fund, accumulated over several years in the Credit Union, was donated recently to the Employees Contribution Plan. The check for \$106.29 was presented to Fred Eichert (2210), ECP committee chairman, by Dave McCoy (4131), right.

M. J. Forrestal (1541) has been appointed to a mathematical methods committee of the American Society of Civil Engineers. This particular committee serves the Engineering Mechanics Division mainly by reviewing technical papers. Mr. Forrestal has been a member of ASCE about two years and has been at Sandia a year.

Continued from Page One

Variable Annuity

ment: Int'l Business Mach. Corp., Xerox Corp.; **Oil and Gas:** Continental Oil Co., Gulf Oil Corp., Kerr-McGee Corp., Marathon Co., Mobil Oil Corp., Phillips Petroleum Co., Shell Oil Co., Std. Oil Co. of Calif., Std. Oil Co. (Ind.), Std. Oil Co. (N.J.), Union Oil Co. of Calif.; **Paper and Pulp:** Boise Cascade Corp., Kimberly-Clark Corp., Scott Paper Co.; **Photographic:** Eastman Kodak Co., Polaroid Corp.; **Retail Trade:** Associated Dry Goods Corp., Gimbel Brothers, Inc., R. H. Macy & Co., Inc., The May Department Stores Co.;

Steel and Iron: Armco Steel Corp., Bethlehem Steel Corp., Inland Steel Co., National Steel Corp.; **Textile:** Burlington Industries, Inc.; **Public Utility (Electric):** Commonwealth Edison Co., Pacific Gas & Elec. Co., Public Service Elec. & Gas Co., Southern Calif. Edison Co., Wisconsin Elec. Power Co.; **Public Utility (Tel.):** American Tel. & Tel. Co.; **Not Categorized:** Columbia Broadcasting System, Inc., Corning Glass Works, The Hertz Corp., Minn. Mining & Mfg. Co., Olin Mathieson Chemical Corp., The Singer Co., Wallace & Tiernan, Inc.

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JANUARY 27, 1967

SANDIA LAB NEWS

President Hornbeck was elected to the board of directors of the Albuquerque United Community Fund during the group's annual meeting. His term is for two years.

One of the current directors is William H. Chandler (3112), who will be serving the second half of his second two-year term.

At the same meeting, silver awards were presented to 32 organizations within Sandia Corporation. At least 75 percent of the employees in these organizations pledged a "fair share" of their salaries to the annual fund drive.

J. W. Hughes (4331) has been appointed vice chairman of professional development for district two of the National Association of Purchasing Agents. NAPA's district two includes New Mexico, Texas, Louisiana, Oklahoma, Kansas, and Arkansas. A member of the Purchasing Agents Association of New Mexico for three years, Jay has actively participated in NAPA's summer workshops and district conferences. He has also written several articles on purchasing.



"MUCKLE SKIRLING O' THE PIPES"—Preparing for a program of Scottish piping tunes for the annual Robbie Burns night at Holiday Inn tonight are, from the left, N. H. MacKay, director, Nuclear Materials Management Division, AEC/AO, and unit president of Ballut Abyad Pipe Band; Pipe Major H. D. Doro (9229); A. P. Gruer (2130); R. V. Peet (9211), pipe major of Ballut Abyad Pipe Band; and J. A. Barber (7323). Allan Gruer is president of the St. Andrew Society of Albuquerque, sponsors of the annual dinner event. Harry Doro, pipe major of Balmoral Pipe Band, will lead the augmented pipe band.

Supervisory Appointments

HOMER G. PIERCE to manager of Systems and Procedures Department 4110, effective Feb. 1.

Homer joined Sandia in November 1956 and was assigned to a budgeting group in staff services. The following May he was promoted to supervisor of the section and transferred to accounting a year later. In 1959 he transferred to systems and procedures. In August 1961, he was promoted to supervisor of Budget Division 4136.

Before coming to the Laboratory, Homer was with the Zia Company at Los Alamos from 1949 to 1956, where he was audit and systems supervisor for the last two years.

He received his Bachelor in Business Administration degree from the University of New Mexico in February 1949 and also attended San Diego State College.

During World War II, he was in the Navy for four years, mostly as a flight and ground school instructor at Pensacola, Fla.



DONALD C. HANSON to supervisor of Advanced Systems Development Division 9211, effective Jan. 16.

After joining Sandia in March 1959, Don was assigned to a data handling group in Field Testing. In the spring of 1961, he transferred to technical photography and was assigned to Holloman Air Force Base until June 1963 when he returned to the Laboratory. In July 1965 he was transferred to Instrumentation Systems Division where he worked on instrumentation development.

Don received his BS degree in electrical engineering from the University of Nebraska in January 1959. A participant in Sandia's pilot Technical Development Program, he was awarded an MS in electrical engineering from the University of New Mexico in June 1962.

Don is a member of the Institute of Electrical and Electronics Engineers.

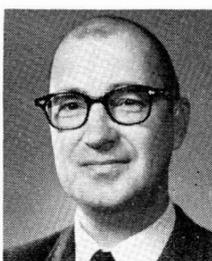


DAVID H. DENTON to supervisor of the newly created Data Operations Division 9229, effective Jan. 16.

Dave was first employed at the Laboratory as a summer employee in 1957. In March 1958 he joined Sandia as a full time employee in antenna research and development. One year later he transferred to advanced electronics systems. In November 1963 he transferred to data operations where he worked in the data center for a year before going to Data Handling Systems Division where he has been working on JTF-2 programs for data reduction.

Dave was enrolled at Texas Christian University when he entered the military service and served over two years at Army headquarters in Heidelberg, Germany. In June 1957 he received his BS degree in electrical engineering from Texas Technological College. One year later he was awarded a BA in mathematics from the same school. Since that he has done graduate work in electrical engineering and mathematics at the University of New Mexico.

Dave is a member of the Institute of Electrical and Electronics Engineers, Eta Kappa Nu, and Tau Beta Pi.



WAYNE D. OLSON to supervisor of the newly created Test Projects Division 9215, effective Jan. 16.

After joining Sandia in June 1958, Wayne worked on electrical systems until he was loaned to field test to participate in the Dominic nuclear test series in 1962. In December 1962 he was promoted to section supervisor in a fuzing systems division. Late in 1963 he transferred to explosive component development. In April 1965 he transferred to Test Planning and Evaluation Division 9213.

Before coming to the Laboratory, Wayne worked on component design at the aeronautical division of Minneapolis-Honeywell for seven years. He was with Sylvania Products in Boston for a year before that.

Wayne received his BS degree in electrical engineering at the University of Washington in June 1950. From January 1944 to February 1946 he was a fire controlman in the U. S. Navy.

He is a registered professional engineer in the state of Minnesota and a member of Phi Beta Kappa and Tau Beta Pi.



LEO ARELLANO to supervisor of Plant Accounting Division 4153, effective Feb. 1.

Leo joined Sandia's cost accounting group in June 1952. Three years later he transferred to general accounting. In September 1961, he became a systems analyst in the accounting area in systems and procedures. He transferred to Supplier Audits Division 4121 in September 1965 where he has worked as an auditor.

Before coming to the Laboratory, Leo taught commercial courses at Los Lunas High School from 1949 to 1952. Before that he was an instructor in accounting at Highlands University for a year.

Leo received his BA degree in business administration from Highlands University in June 1949 and an MS in business education from the same school in August 1950.

During World War II, Leo served with the 9th Air Force in England, France, and Germany. He is a member of the American Association of Accountants.



Events Calendar

- Jan. 27-29—"Dear Me, the Sky Is Falling," Albuquerque Little Theatre, 224 San Pasquale SW.
- Jan. 27-29—"The Rainmaker," Old Town Studio, 1208 Rio Grande NW. For reservations call 242-4602.
- Jan. 28—Jaycees Invitational Indoor Track Meet, Tingley Coliseum.
- Jan. 30—Ruth Page Ballet, Community Concert Series, Civic Auditorium.
- Feb. 2-4, 9-11—"West Side Story," Music Theatre production, Menaul High School auditorium. For ticket information call 255-2952.
- Feb. 9—General Maxwell Taylor, former U. S. ambassador to Vietnam, 8 p.m., UNM Concert Hall.

Retiring . . .



Marshall N. Servis, a pipe fitter in Mechanical Section 4513-2, Plant Maintenance Department, will retire Jan. 31.

A native New Mexican, Marshall was in the ranching business until the early 1930's. He became a journeyman plumber in 1937 and was employed by Sandia in September 1950.

Mr. and Mrs. Servis have a son (Ed, 3134), two married daughters living in Albuquerque, and six grandchildren. Marshall and Ed own a ranch at Peralta, and each of them have built a home there. They have a herd of registered cattle and also raise registered quarter horses. About a year ago they opened a farm and ranch supply store.

"I'll have plenty to do when I retire," Marshall says. "I like to help with the cattle and the horses, and I'll help out in the store. My wife and I enjoy our grandchildren and spend a lot of time with them."

"I'm looking forward to my retirement, but I couldn't have found a better place to work than Sandia."



Burke C. Duff will retire the end of this month after almost 20 years with Sandia.

Burke has worked at Tonopah Test Range for the past six years, most recently in Rockets and Ordnance Operations Section 7233-1. Before that he spent 14 years with the Company at the Salton Sea Test Base where he was in charge of the machine shop.

Prior to joining Sandia in March 1947, Burke spent several years at Salton Sea. He worked there during the construction of the Base and later for four years as a civilian employee of the Navy.

Mr. and Mrs. Duff have a home in Heber, Calif., and will return there following retirement. Burke says he has some maintenance work on his home which will keep him busy for some months. They have a married daughter and two grandchildren living in nearby El Centro.

Burke has two hobbies which he can pursue at the same time—prospecting and rock hounding. "When I first moved to Nevada," he says, "I became interested in rock hounding. This led to lapidary work and now I'm really 'hooked.' My wife is also interested—in the jewelry that I make." He plans to do his prospecting on land that he and his brother-in-law own near Indio, Calif.

Promotions

Roy W. Hunter (4113) to Staff Member Administrative
 William W. Rahhal (4136) to Staff Member Administrative
 Harold F. Linker (1513) to Staff Associate Technical
 Lester G. Welborn, Jr. (2422) to Staff Associate Technical
 Leonard V. Hansen (5212) to Staff Assistant Technical
 H. Lee Kefauver (5212) to Staff Assistant Technical
 Eugene E. Simpson (8113) to Staff Assistant Technical
 Floyd W. Kent (8127) to Staff Assistant Technical
 Carole Lou Celoni (8145) to Staff Assistant Administrative
 Archie R. Gibson (3415) to Mail Clerk
 Profeso Padilla (3415) to Mail Clerk
 Timothy M. Padilla (3415) to Mail Clerk
 Susan C. Hopkins (3126) to Stenographer Clerk
 Barbara L. Jessen (3126) to Typist Clerk
 Maria L. Barela (3126) to Secretarial Stenographer
 Marcella S. Luna (3'26) to Secretarial Stenographer
 Roberta Rainhart (3126) to Secretarial Stenographer
 Enid E. Walker (3126) to Secretarial Typist
 Gladys G. Olguin (9411) to Data Processing Clerk
 Florida Salas (9411) to Tabulating Equipment Operator
 Antonio Silva (9411) to Computer Facility Operator
 Walter E. Scott (2225) to Staff Member Administrative
 Richard E. Rogers (4151) to Staff Member Administrative
 Allyn R. Phillips (5212) to Staff Associate Technical
 Lyle Diamond (2521) to Staff Associate Administrative
 Tommy R. Glauner (2213) to Staff Associate Drafting
 Phillip N. Banhaqel (1325) to Staff Assistant Technical
 Jim L. Starkovich (2548) to Staff Assistant Technical
 Ronald J. Clouser (7334) to Staff Assistant Technical
 William F. Lewis (7334) to Staff Assistant Technical
 Thomas S. Stronach (7344) to Staff Assistant Technical
 John W. Windsor (7344) to Staff Assistant Technical
 Raymond H. Foster (8233) to Staff Assistant Technical
 A. V. McFarland (2551) to Staff Assistant Administrative
 W. A. Rhinehart (2551) to Staff Assistant Administrative
 Henry J. Przystas (2554) to Staff Assistant Administrative
 C. E. Cundiff (3113) to Staff Assistant Administrative
 William M. Coelho (8252) to Staff Assistant Drafting
 Richard Y. Shimada (8252) to Staff Assistant Drafting
 Jerry L. Stewart (8252) to Staff Assistant Drafting
 Hamilton L. Landers (8253) to Reproduction Equipment Operator
 Eldon W. Upchurch (1413) to Staff Assistant Technical
 Roger L. Busbee (8127) to Staff Assistant Technical
 Glen D. Casey (4221) to Assembler
 William C. Iorg (4221) to Assembler
 David T. Reed (4231) to Technician
 David Gonzales (4234) to Technician
 Jerry C. Clough (8222) to Helper-Trades
 Margaret Lucas (3132) to Stenographer Clerk
 Thomas D. Dragoo (2112) to Record Clerk
 Dennis C. Lobley (2232) to Reproduction Service Clerk
 Charlotte L. Freedman (4110) to Secretary
 Violet M. Fogleman (5120) to Secretary
 Floyd L. Mastin (7268) to Staff Assistant Technical
 William A. Cole (8226) to Toolkeeper
 Thomas O. Harrell (2554) to Staff Assistant Administrative

Technical Writers To Offer UNM Course

The fourth technical writing course co-sponsored by the University of New Mexico Community College and the Albuquerque Society of Technical Writers and Publishers starts Feb. 15.

As in the past, a number of Society members—working professionals in the field—will present lectures on such subjects as editor and writer qualifications and responsibilities, training-film script writing, proposals and brochures, manual-writing techniques, report-writing techniques, technical editing, technical illustrating, and writing programmed instructions.

The class will meet Wednesdays at 7 p. m. in Rm. 118 of Mitchell Hall for 12 weeks.

Registration will be through the Community College. Fee is \$15. V. E. Gibbs (7522) is STWP president.

Sandians Candidates for School Board Position

For the single vacancy on the Albuquerque Board of Education, the city has a choice of eight candidates, including two Sandians. The election of the School Board official will be part of the non-partisan city election Feb. 7.

The Albuquerque Board of Education is a five-man, policy-making body responsible for the operation of all public schools in Bernalillo County and the Corrales area of Sandoval County. The Board is also the governing body of the Albuquerque Technical-Vocational Institute. Term of office for a Board member is six years.

The Sandians who are candidates for the Board position are Bernard Stiefeld (2543) and Henry M. Willis, Jr. (3130).

Other candidates are Mrs. Jeannette Stromberg, (incumbent), Clarence Acoya, Robert Estrada, Daniel F. Lyon, Joe E. Wilson, and Mrs. Catherine Higgins.

Second Supplemental Insurance Enrollment Reaches 4750 Total

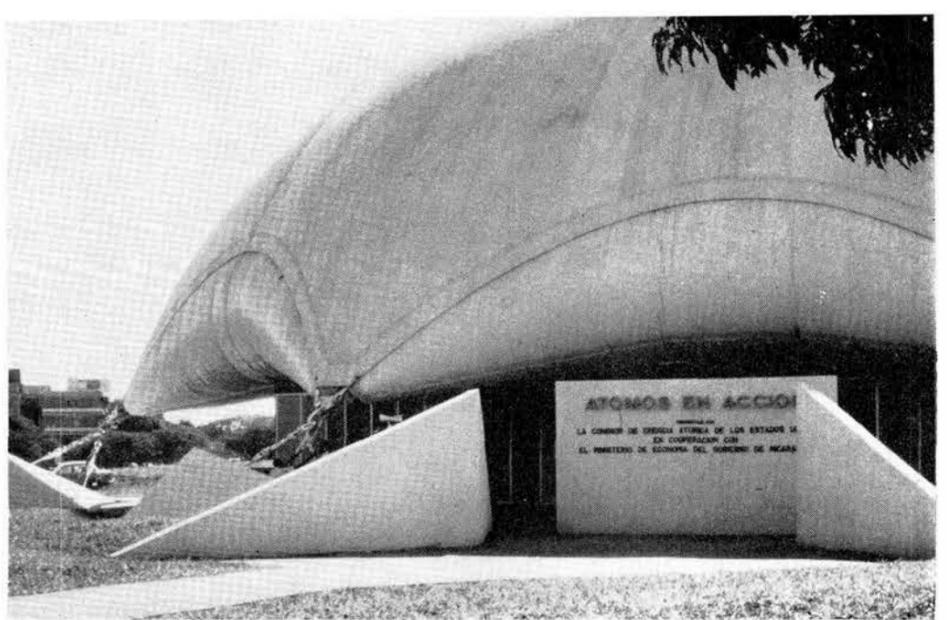
Some 4750 Sandians had enrolled for the new second supplemental insurance coverage this week as the SANDIA LAB NEWS went to press. This total is 64.2 percent of all employees eligible under the new plan.

Deadline for the enrollment is next Tuesday, Jan. 31. Registration forms should be completed and returned to Employee Benefits Division 3122 by then.

Purpose of the second supplemental plan is to make available a supplement to private insurance. Employees may purchase life insurance equal to one year's salary (rounded to the next highest thousand) at very low cost, made possible by low group rates. No medical examination is necessary.



MORE THAN 4700 Sandia Corporation employees enrolled in the second supplemental life insurance plan. Mary Lee Peckum, left, and Margaret Platt of Employee Services Division 3122 file the enrollment cards. Next Tuesday is the last day to enroll.



ATOMS IN ACTION demonstration, by the AEC, was contained in this air-inflated temporary structure. During the month in Nicaragua, some 50,000 persons visited the public exhibit, which depicted principles and peaceful applications of atomic energy.

Sandia Reports Nuclear Science Center Effective in Nicaragua

A month with the U. S. Atomic Energy Commission's Nuclear Science Center in Managua, Nicaragua, convinced Lee F. Parman of the effectiveness of this program to acquaint the general public with the principles and peaceful applications of atomic energy.

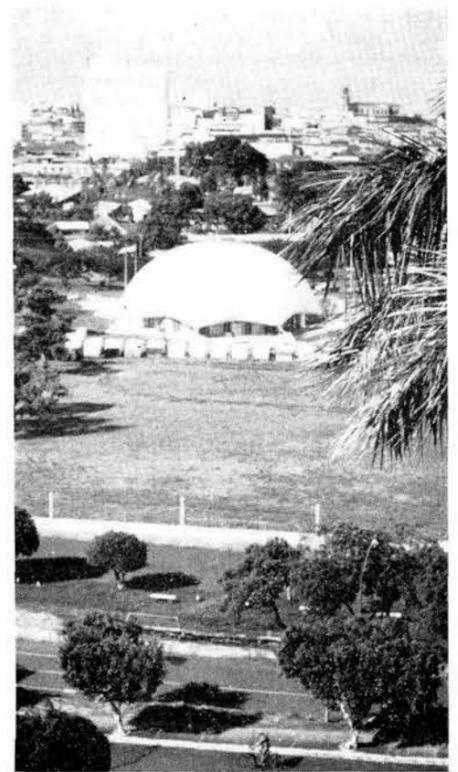
As director of the Technical Information Center, part of the "Atoms in Action" demonstration, Lee was able to evaluate interest in the display and the ability of the Nicaraguan people to use additional information. Lee was on loan to the AEC from his job as manager of Technical Libraries Department 3420.

The exhibit was presented at the invitation of the Government of Nicaragua, in cooperation with the nation's Ministry of Economy, and was located in a temporary dome in downtown Managua. The information center, one of several sections, contained a wide assortment of books on nuclear science, current issues of 60 periodicals, and commercial catalogs for use by the public and the staff. Lee's office was also responsible for a library of 80 films (in Spanish) on various applications of nuclear energy.

"While there, I visited a half dozen libraries in several cities, and gave a lecture on 'Sources of Information' before 85 librarians from all parts of the country," he says.

In addition, Lee conferred with Dr. Grace Scott, who is in charge of the U. S. State Department's Agency for International Development (AID) program to assist libraries in Nicaragua. Last year, AID paid 80 percent of the cost of obtaining 65,000 books for school and other libraries in this Central American country. Most of the country's librarians are part-time, untrained employees and need guidance in ordering and cataloging. "Nevertheless," Lee says, "AID is doing a fine job there in a complex situation."

Lee encountered a real problem in com-



MANAGUA, NICARAGUA, was the site of the AEC's Nuclear Science Center when Lee Parman (3420) was recently director of its Technical Information Center.

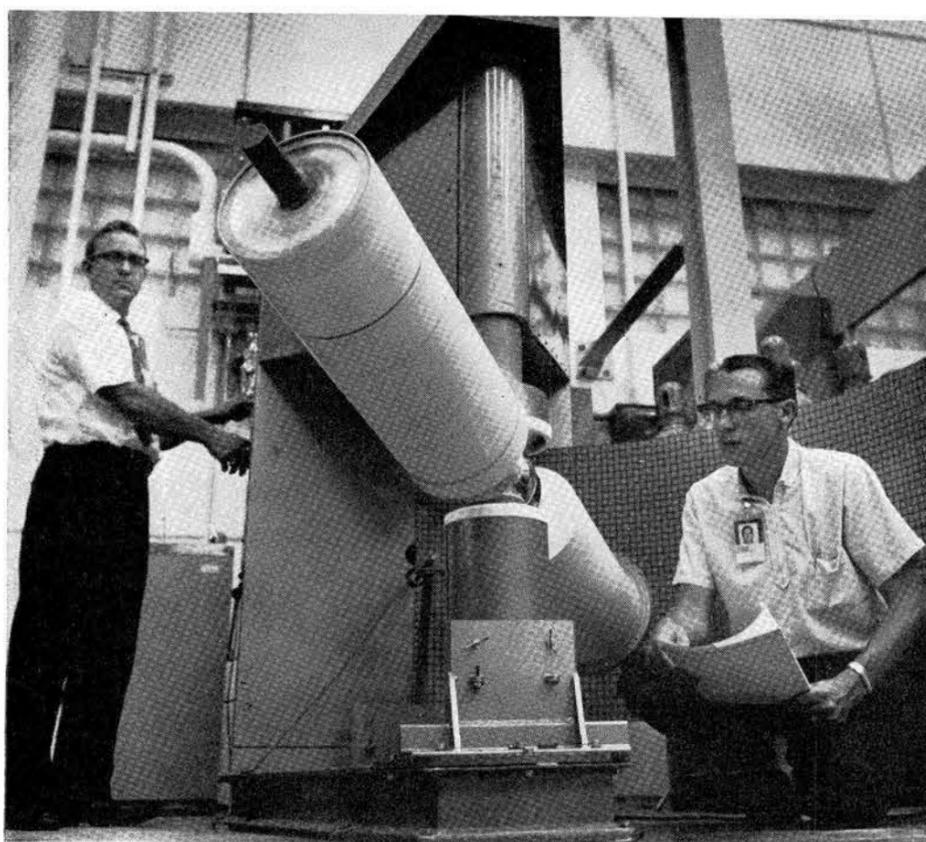
munications. "I took an eight-week accelerated course in Spanish before I left, but I said 'mas despacio' (slower) more times than you can imagine," he recalls. "It wasn't merely a lack of fluency; I had great difficulty in understanding the words as they were spoken to me."

The "Atoms in Action" demonstration is shown at two locations in the Western Hemisphere each year. It will be set up next in Panama. During the month in Nicaragua, some 50,000 persons saw the six public demonstrations, which included popularized interpretations of the relationship of radiation to medicine, agriculture, industry, and education.

"There were 25 Nicaraguan guides—many of whom had been educated in the United States—and it took about an hour to see the public exhibits located around the periphery of the exhibit building," Lee says.

In the auditorium area, a series of four-hour lectures on nuclear science was presented to high school students and teachers from throughout the Central American country. In addition, a laboratory and classroom area was used by the center's staff to teach three courses on basic nuclear electronics, radioisotopes in medicine, and radioisotopes as a tool of basic investigations. The course, conducted by the Oak Ridge Institute for Nuclear Studies, lasted four weeks with two hours of lectures and two hours of lab work each day.

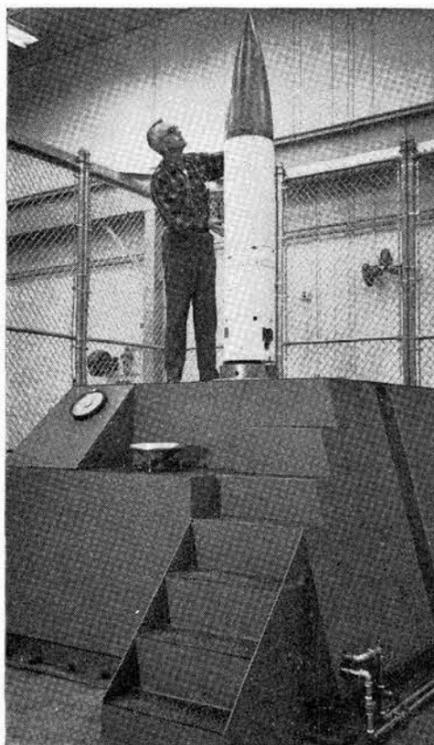
Still another section of the dome contained a small Cobalt 60 source. Seeds and foods were exposed to gamma rays to demonstrate radiation effects on genetics and food preservation. This demonstration was directed primarily to college faculty members and graduate students. It was supported by the Puerto Rico Nuclear Center. AEC representatives will return to Nicaragua every six months to gauge effectiveness of the program.



DESIGNER D. R. SCHAFER (7214), left, and N. E. Corlis (7211) are ready to check the payload attitude control system of this cylindrical section. The spherical bearing (in center of photo) permits nearly frictionless spinning of the test vehicle.



AIR BEARING DEVICE, which measures moment of inertia almost independent of the test object's weight, is positioned by designer C. E. Miller (left) while his supervisor, R. N. Browne (7214), follows the operation.



A DEVELOPMENT ROCKET is secured in a vertical position by P. R. Littell (7214) prior to testing on this dynamic balancing machine. The rocket can be spun at speeds up to 1000 rpm to simulate conditions it might encounter in flight. Operators are outside of the wire fence when the machine is in operation.

Field Test's Mass Properties Lab Checks Rockets, Large and Small

If the contents of a rocket or missile are unbalanced, the vehicle's trajectory will be affected. In extreme cases, lack of balance can cause vibrations which may destroy the vehicle.

This problem of balance is one of the concerns of the mass properties laboratory in Bldg. 892. This recently-enlarged laboratory is operated by Mechanical Design Division 7214. Field Test units pass through this lab so that such factors as static and dynamic balance, center of gravity, and moments of inertia can be determined.

For instance, to determine dynamic balance, diagnostic rockets weighing up to 7000 pounds can be mounted in a vertical position on the revolving top plate of a dynamic balancing machine. They are then spun at the same spin-rate they will experience during flight (50-1000 rpm).

If the distribution of components within the vehicle causes an out-of-balance condition, this will become evident during the test. If correction is needed, weights can be taped to the outside of the vehicle and the test re-run. When the desired balance is achieved, the weights are mounted inside the vehicle.

Similar vertical balancing machines have been installed at Barking Sands launching site in the Hawaiian Islands and at Johnston Atoll. These are used to identify any changes that might have occurred due to on-site modification of the vehicle's contents.

Moments of inertia of shapes weighing up to 50,000 pounds are determined in the laboratory. (The moment of inertia must be known in order to determine the aerodynamic stability of a test vehicle.) The test vehicle is suspended on a torsion bar and oscillated about the axis of the bar. The time of oscillation (or swing) is measured by means of a photoelectric cell and this number is used in calculating the moments of inertia of the test vehicle. It is sometimes necessary to ballast units to give them a desired moment of inertia.

Two "Trifilar" instruments, using a three wire pendulum system to acquire moments of inertia data, are generally used for small objects; however, to obtain valid results the precise weight of the test object must be known.

C. E. Miller of the Mechanical Design Division 7214 has developed an air bearing device that can make measurements of moment of inertia almost independent of the test object's weight. (Moments of inertia are normally dependent upon the distribution of the test object's mass around a given axis.)

The test device and supporting plate float on a film of air, and the measurement is derived from the resistance or spring motion on a torsion bar attached to the bottom of the plate. "This is our experimental model, but it works so well we're using it without modification," Mr. Miller says. "We find it much easier to repeat exactly an experimental set-up with this instrument than with the Trifilar."

Another new instrument, designed by D. R. Schafer (also 7214), makes possible dynamic checkout of the payload attitude control system in a spinning rocket.

A spherical bearing, lubricated with nitrogen gas, is located at the test vehicle's center of gravity and permits nearly fric-

tionless three-degree-of-freedom movement (involving roll, pitch, and yaw) to the test vehicle. Vehicles weighing up to 180 pounds and roll rates up to eight revolutions per second have been successfully tested.

During the longest single run on the simulator, which lasted 45 minutes, the coasting vehicle slowed from six to three revolutions per second. Using a "normal" bearing for the same test, the vehicle would have stopped revolving in five or ten minutes.

Before use, the test vehicle must be dynamically balanced. The roll rate is induced by a variable speed motor housed in the control console, but once the desired rate is attained, the motor is disengaged and the vehicle continues to roll. The rate is affected only by friction in the bearing and by air drag. A photocell switch in the test vehicle is actuated by a spotlight in the overhead support to initiate the test vehicle's attitude control system at the desired time and position.

"The idea of a three-degree-of-freedom gas bearing is not unique," Mr. Schafer notes, "however, this is the only one normally operated with a relatively high spin rate about one axis."

Two Sandians Serve As Panel Moderators

Two Sandians served as session moderators for the 1967 Annual Symposium on Reliability, Jan. 10-12, in Washington, D. C.

J. M. Wiesen, manager of Reliability Department 2150, moderated the "Reliability Mathematics" session.

A. C. Littleford, supervisor of Test Equipment Reliability and Engineering Design Practices Division 2442, moderated the session on "Computerized Design Techniques."

Coronado Club Staff Dining Room Now Remodeled

The Staff Dining Room at the Coronado Club is the most recent facility of the Club to be remodeled. It is another success for Sandia architect Bob Sharp of Plant Engineering's Division 4541, and Tom Morgan of Employee Services Division 3121.

The room now reflects the Spanish theme of the Club's interior with paneled walls and wrought iron lighting fixtures. The furnishings, including a large credenza for china, are Spanish colonial style.

The attractive room, with a seating capacity of about 40, is available for Company business or for private parties of members of the Club.

SPEBSQSA

Sandians Find Harmony, Musical Satisfaction With Barbershoppers

Harmony, fellowship, and helping others are some attributes nine Sandians find in SPEBSQSA—not a tongue twisting acronym, simply one way to shorten the "Society for the Preservation and Encouragement of Barber Shop Quartet Singing in America."

The Albuquerque Chapter of the Society has a membership of 40 and a basic chorus of 32 voices. From the overall body, members are encouraged to form their own quartets.

Most Barbershoppers stress the enjoyment of singing, but some cannot read music and others don't sing. The non-singing members, or "crows," enjoy listening to close harmony and contributing their talents to building sets, lighting, and other details associated with the group's colorful shows.

Barbershop harmony is produced by four voices, unaccompanied, with a high harmony part consistently sung above the melody. Rules of time and rhythm are often sacrificed to emphasize important passages. There is at least one harmonizing chord on each note of the melody. Sometimes there are several chords on each melody note, which are called "swipes."

Gil Wallace (4214), a member of the barbershop quartet that won the international competition in 1957, adds that barbershop harmony and spiritual singing are the only native American types of singing.

"Barbershoppers frown on accompaniment," says Gil, "you must sing to get the ring."

The Chapter also provides community services. A portion of the proceeds from the group's annual show is given to the Rehabilitation Center. Another portion is allocated to the Society's national service project, the Institute of Logopedics for handicapped children at Wichita, Kans. It has been found that some of the patients, who are afflicted with organic and mental speech impairments, can be "reached" through music. Barbershoppers say, "We sing so they will speak."

From time to time, the full chorus also stages special performances at the Veterans Administration Hospital and Nazareth Sanatorium. The Barbershoppers generally aim for one public appearance a month. They sing free of charge at some non-profit civic events, but request a specified sum or percentage of the proceeds for performances at money-making events.

The Barbershoppers hold practice sessions every Tuesday night at the American Savings and Loan Association building, 2300 Louisiana NE.

Sandia members of the local Barbershop group include Richard Corn, Jr. (9225), R. E. Arvidson (2111), L. A. Faw (2223), R. A. Harley (1541), C. E. Jackson (1515), B. W. Jolliffe (2122), L. J. Seligman (9213), J. A. Siemens (7342), and G. S. Wallace (4214).



NEW DECOR in the Coronado Club's staff dining room is displayed by Don Winske, left, club manager, and Tom Morgan of Employee Services Division 3122. The newly redecorated room is available for Company business and private parties.

Service Awards

20 Years

Shorthand Students Hear How Industry Uses Skills

15 Years



Two groups of 30 shorthand students from Del Norte High School have been scheduled for tours of the Sphere of Science and Personnel Bldg. 832.

The first group of students with their teacher Miss Sharon Vandetti was here Jan. 25. The second group will visit in February.

While at the Sphere, Mrs. Mary Campbell, supervisor of Secretarial Section 3126-3, discussed secretarial duties and positions at Sandia, and Mrs. Camille McRae of Organization and Manpower Planning Division 3133 told of the Company's testing requirements for applicants for secretarial jobs.

After seeing "The Sandia Story" film, the group toured Bldg. 832. Mrs. Bernice Sanders of Personnel Administrative Services Division 3153 showed the students several typical work locations, and demonstrated operation of the Flexowriter and the motorized shelves used for employee records.

A representative of Community Relations Division accompanied the group.

Sandia Authors

P. B. Bailey (5261), L. F. Shampine (5262), and P. E. Waltman (former Sandian), "The First and Second Boundary Value Problems for Nonlinear Second Order Differential Equations," Vol. 2, No. 4, JOURNAL OF DIFFERENTIAL EQUATIONS.

D. R. Anderson (1111), "Thermal Conductivity of Polymers: A Review," Vol. 66, No. 6, December 1966, CHEMICAL REVIEW.

E. J. Graeber, G. H. Conrad, and S. F. Duliere (all 1122), "Crystallographic Data for Solvated Rare Earth Chlorides," Vol. 21, Pg. 10-12, 1966, ACTA CRYSTALLOGRAPHICA.

J. R. Holland (9332), "Effects of Shock Loading on the Lattice of a Silicon Bronze with Low Stacking Fault Energy," PROCEEDINGS OF THE SYMPOSIUM ON LATTICE DEFECTS.

E. J. Graeber (1122) and D. A. Jelinek (2151), "Technique for Obtaining Powder Patterns from Single Crystal Spheres," Vol. 13, July-Sept. issue, NORELCO REPORTER.

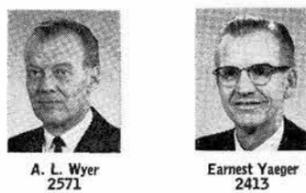
J. L. Gardner (3421), "An Inexpensive Information Retrieval System Using Coordination of Terms with Edge-Notched Cards," November issue, COLLEGE AND RESEARCH LIBRARIES.

R. K. Traeger (1111), "Dynamic Mechanical Testing to Evaluate Radiation Induced Changes," Vol. 39, September issue, RUBBER CHEMICAL AND TECHNOLOGY.

10 Years

Jan. 27 - Feb. 9

J. H. Jones 2431, Anna E. Lewis 3126, Hallie G. Tankersley 3130, J. M. Romero 4514, J. F. Sanchez 4611, Barbara M. Vandenberg 7334, G. E. Lane 9426, R. E. Davis 1542, Ruth M. Vojt 4333, C. C. Smith 8243, L. E. Jones 9211, E. R. Dunaway 1214, E. M. Austin 1515, W. W. Troy 3243, J. A. Chifalo 3462, M. C. Reynolds 5530, H. W. Nunez, Jr. 7322, R. C. Kishbaugh 2212, D. B. Martinez 4212, W. P. Brooks 5134, Diana M. Gurule 3126, G. I. Baca 3242, L. J. O'Connell 2442, Beverly J. Flowers 3126, L. T. Davis 7267, and Pearl E. Payne 8243.



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JANUARY 27, 1967
SANDIA LAB NEWS

SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER

CLASSIFIED ADVERTISING
Deadline: Friday noon prior to week of publication unless changed by holiday.
A maximum of 125 ads will be accepted for each issue.

RULES
1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Corporation and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

FOR SALE
'56 RAMBLER station wagon, rebuilt motor, \$250. Alexander, 9805 Parsifal Ct. NE, 299-9244.
\$500 GUILD MARK IV classical guitar, professional case, trade for equal professional photographic equipment or \$330 cash. Eyer, 299-4580.
'53 FORD V8 Ranchwagon, new tires, best offer. Baca, 299-3340.
UTILITY TRAILER, 4'x7' w/spare tire and bumper hitch, \$10. Yimst, 268-2896.
3-BDR., dcn, Roberson, dbl. garage, carpet, drapes, hw floors, \$1600 below appraisal, \$700 down plus 2nd mortgage. Cnare, 3225 Britt NE, 299-3604.
BABY CRIB and mattress; playpen and pad; bassinet; infant seat; Weewinky blue snow suit, 18 mos. Kracko, 299-1030.
.22 LONG RIFLE AMMO, \$4.50 per carton; A3-03 Sprin-field, \$40; Garrand carbine boot, \$4.50; Howe's "Modern Gunsmith" 2 vols., \$7. Larsen, 255-6407.
'62 CHEVROLET 6-cyl. 4-dr. sedan, std. trans. Samuelson, 298-3637.
BARRCRAFTER ski rack, trunk lid model, \$12; 3 tires, 6.95x14, \$4/ea. Brannon, 296-4443.
DELUXE wood-paneled Ironrite ironer, \$150, chair included. Roche, 298-9725.
HEAVILY BUILT two-wheel trailer. Prutsman, 299-2024 before 2 p.m.
4-BDR. Mossman Sacramento, den, \$21,000, 4 1/2% GI loan may be assumed, fireplace, carpet, AC, built-ins, sprinklers, pitched roof, 2832 Dakota NE, Glenn, 265-0647.
NEW JENSEN speaker enclosures, walnut veneer w/15" woofers, 8" mid ranges, 3" tweeters, both for \$45. Dick, 299-4878.
BLONDE WIG, \$100. Jones, 299-8597.

'65 BUICK sportwagon, PS, PB, factory air, AT, R&H, 30,000 miles, \$2045. Schmierer, 299-2352.
PIANO, Gulbransen, studio, console, \$395. Goens, Cedar Crest, 282-3492.
BLUE Morgan-Jones spread for double bed; '55 Ford, 6-cyl., 4-dr., \$135. Frauenglass, 345-0119.
IRONRITE ironer w/metal top and contour chair. Webb, 298-8139.
HI FI: AM-FM tuner, 25 watt amplifier and pre-amplifier, Eico HF-12 amplifier, Collaro changer, Garrard turntable, plus arm. Schmitt, 296-3267.
TRIUMPH TIGER CUB, 250cc, recently overhauled, new racing carburetor, needs carburetor and ignition timing adjustment, \$100. Shock, 877-3728.
'55 PONTIAC, 4-dr., heater, AT, V8, new tires, new seat covers, engine recently tuned, \$125 or best offer. Cuthrell, 247-9263.
3-BDR. ROBERSON, 1 1/2 bath, family-dining rm., w/tp, heated garage, AC, drapes, wardrobe closets, sprinklers, near shops - schools, 9624 Shoshone NE. Leeman, 299-9149.
GERMAN SHEPHERD, AKC, 2 yrs. old, house-broken, excellent watch dog, good w/children. Mautino, 298-6267.
DELTA 9" table saw, 4" jointer w/1 hp motor, \$225; Sears 10" table saw w/1 hp motor, \$100; Sears 6" jointer w/1/2 hp motor, \$75. Kavet, 299-1793.
GE electric dryer, \$30; Whirlpool dishwasher, \$20. Bishop, 299-6757.
TOY POODLES, AKC registered, 6 wks., old, 1 black, 3 white, \$50 to \$75 for immediate sale. Blythe, 243-7190.
ADDING MACHINE, manual type, nine digits, \$15. Henry, 1828 Florida NE, 256-2467.
BRAND NEW mountain cabin, over 500 sq. ft. on acre of land, in Sandias. Edwards, 246-2635, 298-1362.
WALNUT FINISHED hi fi cabinet, plenty of storage space. Baron, 296-4279 after 5:30.
'60 FALCON 2-dr., automatic, R&H, best offer. Pelletier, 298-6356 after 5.
'66 PORSCHE 911, low mileage, completely equipped, AM/FM/SW radio, AC, \$5895. Kjeldgaard, 296-2212 evenin's.
HAM TRANSMITTER, WRL Globe King 500B, 500 watts AM/CW, has VFO, pi-net, spare 4-400A, etc. \$150. Grab, 299-0015.
21 ACRES of mountain land, 7 miles east of Truchis Peak, good fishing and hunting. Gonzales, 299-1145.
'58 MERCURY 4-dr., AT, PS, PB, R&H, \$99. Doom, 299-2508.
MILITARY AMMO, '30-06, carton of 20 rounds w/two cartons of brass, for \$1.50. Alvino, 255-6339.

3-ACRE secluded residential lot, off Rio Grande Blvd. NW, beautiful old trees, easy terms, paved road in. Stein, 242-2967.
ELECTRIC RANGE, 40" Frigidaire deluxe, \$50. Denish, 256-1559.
'65 CHEVROLET IMPALA, 4-dr. HT; 21" Motorola TV console, 5 yrs. old, cherry cabinet. Jarvis, 298-1113.
EQUALIZING HITCH, Reese, 400 # cap, axel type, may be converted to a frame hitch, \$50; pair of West Coast mirrors, 5"x10" chrome, tripod mtg., \$5 ea. Holliday, 298-8106.
AKC blk/tan male Dachshund puppies, excellent background for type and temperament, potential for show or breeding stock, \$50-75. Simon, 299-0703.
PIANO, Baldwin Howard spinet, light walnut, 2 yrs. old; lot in Glenwood Hills on cul-de-sac. Randall, 256-1853.
'64 DKW Junior deluxe, 33 mpg, \$795, consider trade for older import. Flowers, 282-3458.
2 DECORATOR birdcages, \$7.50 ea., original prices \$22.50 and \$14.95. Risk, 299-7205.
23" WESTINGHOUSE American contemporary cabinet TV, walnut finish, 1 1/2 yrs. old, \$90. Marshall, 298-4206.
POLAROID automatic 100 w/leather case, flash, and portrait attachment, \$85; '64 Frigidaire "Imperial" washer, works, \$35. Goshorn, 265-7420.
CARPET, Cumuloft, continuous filament nylon, size 12'x10', champagne beige w/foam cushion pad, \$50. Peterson, 299-7351.
'64 CHEVY CARRYALL, 327 w/V8 engine, 4-spd. trans, new tires, \$1050. Ortega, 344-2182.
16 GAL. aquarium and equipment; maple bed. Hayes, 298-4682.
10 x 12' TENT, Sears' outside frame, \$45. Schnetzer, 298-8255.
CLOTHES LINE, aluminum folding umbrella type, 227 ft. of line, make offer. Moyer, 345-0567.
'61 TRIUMPH Tiger Cub; 2 new shocks for Volkswagen sedan or Microbus. Campbell, 256-3214.
MOTORCYCLE, 250cc w/windshield, spare parts and helmet, 6500 miles. Heidrich, 344-7669 after 5.
'59 RENAULT 4CV, \$75, 35 mpg. Chavez, 242-6078.
27" TV in solid oak cabinet w/doors, best offer. Seligman, 265-8236.
INTERIOR door w/hardware and frame, \$5; 6' folding metal closet door w/frame, \$15; lawn mower w/grass catcher, \$5. McCoach, 298-5960.
4-BDR. Mossman, 1 1/2 baths, den, 2 fp, utility rm., AC, carpeted, sprinklers, bubblers, swimming pool, approx. \$6200 to loan, \$26,500 total. Lawrance, 256-0848.

LAND, South 10, wooded, large pines, adjoining Forest Service land, sold in 10 acre tracts. Lee, 299-1114.
'61 DODGE truck, multiple delivery, make offer. Lynes, 268-0144.
NEW custom made drafting table top 60"x30", steel frame, adjustable vinyl covered top, one drawer, \$65. Hodges, 268-5097.
SIGNAL GENERATOR; Colt New Mexico anniversary '22; antique wall phone; German paratrooper helmet; high frequency radio receivers. Laskar, 299-1024.
RANGE HOOD, 48" Stanthony; ski boots, men's size 10, \$10; lady's size 7, \$5. Smith, 268-2141.
'65 MUSTANG w/'66 equipment, 300 hp V8 engine, AT, AC, mag. wheels, new tires, \$2095. Syme, 268-1334.
BICYCLE, Schwinn, girl's 16" Murray, has coaster brake, \$12.50. Coleman, 299-2377.
'64 OLDS Dynamic 88, 4-dr. HT, factory air, full power, one owner, 25,000 miles, \$2050. Anderson, 268-0793.
'61 CHEVROLET Impala SS convertible, two disassembled 348 engines, racing pistons, 3-2 setup, sell together or separate, make offer. Workman, 298-8201.
2-BDR. ADOBE on seven acres at Cedarcrest, low cost financing available. Barth, 345-0172.
BICYCLE, Schwinn, girl's 26", new tires and tubes, \$20. Freyermuth, 299-2053.
SKI BOOTS, two pairs, Garmisch boots, women's size 6 1/2, Kastinger boots, men's size 10 1/2, medium width. Holland, 299-6836.
3 PR. MEN'S supphose, brown, size 10 to 11 1/2, cost \$5 per pair, \$10 for all. Hall, 256-7282 evenings.
MOUNTAIN LAND, no improvements, dirt road 2 mi. west of Highway 10 on Cole Spring road, 100 acres, \$100,000 cash. Doleshal, 282-3237.
'65 PORSCHE cabriolet convertible w/S.C. engine, AM/FM radio, new tires, \$3400. Neun, 3600 Parsifal NE, 299-9188.
DRAPES, 155" wide, complete, \$10, approx. 26 yds. of material; single maple bed bookcase headboard, \$20 complete. Newman, 299-2729 after 5:30.
'55 FORD V8 station wagon, R&H, original owner, \$165. Hart, 299-8832.
2 1955 English Fords, one good, the other wrecked w/a lot of good parts, both for \$225. Marshall, 299-3969.
AMATEUR EQUIPMENT, VFO, Balum-coil, low-pass filter, mike RG/8U cable w/connectors. Moore, 298-8909.

REFRIGERATOR w/freezer compartment, 12 cu. ft., \$50. Barnett, 299-5544.
FULL-SIZE white canopy bed, complete, blue spread w/matching canopy top, \$70, deluxe dress form, \$10. Browne, 344-9675.

FOR RENT
HOUSE, available Feb. 15, 3-bdr., 1 1/2 baths, CFA, carpeted, draped, Hoffmantown area, \$105/mo. lease basis, \$110/mo. rental basis. Akin, 299-4242.
5-BDR. HOME, 3 baths, electric kitchen, dbl. garage, den, landscaped, 2 firepl-cs, spacious, excellent location. Goodman, 299-3652.
2-BDR. APT., stove and refrigerator, available Feb. 1, 5902 Bellman NE. Tillman, 255-6292.
PLACITAS AREA, large house, acreage, corral, orchard, spring, all utilities available, quiet country living, immediate occupancy. Illing, 299-7378.
LARGE 2-bdr. unfurnished apt., drapes, carpeting, utilities paid, near schools, shopping centers, and Sandia Base. Berynk, 299-9171.

WANTED
RIDE from 3417 Chelwood Rd. NE, Holiday Park, to Bldg. 894. Roche, 298-9725 after 5:30.
USED outboard motor. Jones, 299-8597.
RIDE from 2nd St. & La Poblana Rd. NW on the 2700 block, to Gate 6. Baca, 344-0258.
BOX TRAILER, 2 wheel 4x6, need hitch also. Tiefert, 299-2763.
TRADE \$179 set solid oak bunk beds for car in running order, stereo or old piano. Kentschy, 255-3795 after 5.
ELECTRONIC photoflash tube, Anglo type, 5804X, 5484X, or 4884X. Berg, 299-7334.
RIDE from Belen to Tech Area 1. Miller, 864-4376.
BABY SITTING in my home, prefer pre-school children, 316 Gen. Hodges NE. Workman, 298-3604.
CEMENT MIXER w/electric motor. Knutsen, 299-6183.

LOST AND FOUND
LOST—pair of red earring, lady's black wool gloves w/leather palms, keys in brown case, lady's green gloves w/leather palms, check book, wallet, keys including 2 large brass keys w/US Government, key ring w/8 keys and nail clippers, key chain w/road runner, red leather key case, crystal pendant on gold chain, brown leather glove w/fur liner, Dodge car key, Zippo cigarette lighter. LOST AND FOUND, tel. 264-2757, Bldg. 610.
LOST—Man's brown leather gloves, lady's tan gloves, pearl earring, key ring w/key and bullet, Parker Eversharp, mechanical pencil, Timex watch. LOST AND FOUND, tel. 264-2757, Bldg. 610.



NEW ORLEANS style Mardi Gras comes to the Coronado Club Saturday, Feb. 4, with costumes, seafood dinner, and dancing to the Lamplighters. Rex (1333) and Veloy (3411) Elder set a proper celebration mood. Tickets are \$2.75 for members, \$3.25 for guests.

Coronado Club Will Celebrate Mardi Gras Festival Saturday Feb. 4

Mardi Gras time at the Coronado Club is Saturday, Feb. 4.

Count on the whole Mardi Gras bit with everything but dancing in the streets. Dancing will be in the main ballroom with the Lamplighters on the stand.

Dress is optional, but costumes are in order—the gaudier the better. It is Mardi Gras.

The celebration starts at 6 p.m. with a social hour, dinner from 7 to 8:30, and dancing from 9 p.m.

A seafood dinner will be served. Cost to members is \$2.75, guests \$3.25. Tickets must be picked up at the Club office by 9 p.m., Feb. 3.

Social Hours

Tonight, Elaine Harris will make the happy music, and the seafood buffet will be served. On Friday, Feb. 3, Bud Fisher will be on the bandstand, and chicken will be the top feature of the buffet. On

President Hornbeck Will Speak at Contamination Control Tech Symposium

Medical and pharmaceutical applications of the laminar air flow technique for the control of airborne contamination will be the central theme of an annual technical symposium sponsored by the Rocky Mountain Region of the American Association for Contamination Control at Sheraton Western Skies on Feb. 10.

John A. Hornbeck will be the dinner speaker at the one-day event which is expected to attract 100 persons. His subject will be "Progress in Contamination Control."

Other Sandians participating in the program are D. W. Ballard (2564), who will serve as moderator of an afternoon panel discussion on control of airborne contamination in hospital design, and W. J. Whitfield (2572), a panel member.

Other speakers include Dr. G. Briggs Phillips, U. S. Public Health Service, Communicable Disease Center; George S. Michaelsen, director, Division of Environmental Health and Safety, University of Minnesota; C. P. Shelly, national president, American Association for Contamination Control; and Dr. William C. Beck, surgeon, Guthrie Clinic, Ltd., Sayre, Pa.

A. M. Granum, a retired Sandia employee, is the program director.

Sandia Speakers

R. W. Kelley (7334), "Instrumentation for Accelerometer Shock Calibration," 12th Meeting of the IMOG Subgroup on Environmental Testing, Feb. 8-9, Richland, Wash.

F. W. Muller (2113), "Operational Estimation," Jan. 9, and "The Use of Modified Logic Equations in Reliability Analysis," Jan. 10, University of Missouri, Department of Mathematics, Rolla, Mo.

N. E. Hansen (3428), "Records Management," Albuquerque chapter, Administrative Management Society, Jan. 17.

A. D. Swain (2152), "Field Calibrated Simulation," Human Performance Qualification in Systems Effectiveness Symposium, Jan. 17-18, Washington, D. C.

Friday, Feb. 10, Max Apodaca will provide the music, and the chuckwagon beef and shrimp buffet will be served.

Bridge

On Monday, Jan. 30, the duplicate bridge group will meet at 7 p.m. First February meeting is set Monday, Feb. 6, at 7 p.m.

Ladies bridge will meet at 1:15 p.m. Thursday, Feb. 2.

Welcome . . . Newcomers

Jan. 9-20

Albuquerque		
Virginia R. Barkhurst	3126	
*Mary Jane Denison	3126	
Dona Lee Fuschino	3151	
Patricia A. Gerety	3126	
Rosemary Kilmer	3126	
Paul A. Marianetti	4151	
Jo Ann Miller	3126	
Janet A. Pappas	3126	
Iona C. Rivera	3126	
Louis C. Roper	4543	
Wynona A. Sexson	9412	
*James D. Smith	7232	
Florida		
Thomas O. Hunter, Gainesville	7263	
Illinois		
Ronald W. Carlsten, Park Ridge	1323	
Wayne M. Rigby, Park Ridge	1415	
Henry F. White, Jr., Chicago	1414	
Indiana		
Carl L. Zinn, Briston	7246	
Montana		
Stephen M. Falacy, Missoula	7246	
New Mexico		
James L. Krone, Alamogordo	9212	
Frank J. Ortiz, Jr., Santa Fe	4121	
*Denotes rehire.		



NEW MEXICO STATE UNIVERSITY College of Engineering administrators and the vice president of research visited Sandia Laboratory last week. Shown during a tour of Sandia's wind tunnel facilities are, from left, G. A. Fowler, vice president 9000; D. L. Hughes (3134); R. C. Maydew (9320); R. H. Duncan, vice president of research, NMSU; H. A. Brown, head, Electrical Engineering Department; Frank Bromilow, dean of Engineering; E. F. Thode, head, Chemical Engineering Department; M. E. Thompson, dean, Graduate School; and C. Q. Ford, head, Mechanical Engineering Department. Sandia security guard B. G. Valencia is in the background. During their visit the educators met with Mr. Fowler; R. B. Powell, vice president 3000; and W. J. Howard, vice president 1000.

From China to Hunger

Foreign Policy Problems to be Discussed By Sandians, Other Community Groups

What are the problems in Red China, India and Pakistan, Vietnam, Yugoslavia and Rumania, and Chile? How do these problems affect the United States? What is our foreign policy in these areas?

These questions will be discussed in New Mexico and throughout the nation during this year's Great Decisions program.

The "key" to the Great Decisions program is discussion—informed discussion, based on the latest facts. The program provides a way for small, informal groups to discuss eight carefully selected foreign policy questions of critical interest to this country.

Many Sandians will be participating in local group discussions. In addition, arrangements are being made to conduct discussion sessions during the noon hour and after work at Sandia.

Discussion groups will meet during February and March. The discussions give participating individuals the opportunity to become better informed on foreign policy issues; to discuss, evaluate, and develop opinions on these issues; and to make these opinions known in Congress and the State Department.

To supplement general background knowledge on the topics, data on each of the eight discussion areas are presented in a 96-page, non-partisan, Great Decisions booklet (available for \$2.50 from Sandia's technical library, Bldg. 804, and from all Albuquerque Public Libraries).

These booklets also contain reading lists, discussion questions, and eight opinion ballots. The ballots may be submitted to the Albuquerque Great Decisions committee which will total, correlate, and forward these opinions to our congressmen and the State Department.

Two Sandians, John A. Hornbeck and Howard E. Frankel, are serving on the Albuquerque Great Decisions Committee. In addition to their committee responsibilities, Howard (3131) is establishing discussion groups at Sandia. Anyone interested in joining or forming a group should contact him.

Howard says, "The purpose of the discussion groups is to enable individuals to become better informed on the many issues of U. S. foreign policy. By formulating and discussing opinions on these problems and the possible ways in which they might be handled, we develop a greater interest as well as a better understanding of the current events that affect our nation.

"The Great Decisions booklets provide a well-written and excellent source of information on the discussion topics, and the

discussion groups provide a forum in which to express and evaluate your opinions."

Another Sandian, Robert Colgan (3432), helps produce the Great Decisions television series.

Bob, who has moderated the TV series since its inception in 1960, says, "As with the usual Great Decision groups, our TV discussions are geared to opinions; however, we invite four different guests for each program in order to present a variety of viewpoints.

"Other major differences between the TV and the usual discussion meetings are our ½-hour time limit and our viewing audience.

"With these factors in mind, our discussions touch on many problems rather than explore one problem in depth. Thus we hope to stimulate the interest of our viewers in addition to exposing them to the many factors that affect foreign policy in each topic area.

"There is seldom an 'expert' on the series, because we seek opinions from our citizenry rather than authoritative reports which are available from various news media. Our guests are from Albuquerque and Santa Fe."

The TV discussion-topics precede each week of group-meeting topics. Topics and dates for the programs at 6:30 p.m., Thursdays, KNME-TV (Ch. 5) are:

Communist China and the U. S.	Feb. 2
India and Pakistan	Feb. 9
Vietnam	Feb. 16
Yugoslavia and Rumania	Feb. 23
The Spread of Nuclear Weapons	March 2
New Deal in Chile	March 9
NATO in Crisis	March 16
The War on Hunger	March 23

Video-tapes of the programs are telecast on KNME-TV (Ch. 5) Fridays, 10 a.m.; KOB-TV (Ch. 4), Sundays, 8 a.m.; KGGM-TV (Ch. 13), Sundays, 11 a.m.; and KIBM-TV (Roswell), Sundays. In addition two radio stations, KGIW—Alamosa, Colo., and KRSN—Los Alamos, N. M., broadcast the discussions.

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JANUARY 27, 1967

SANDIA LAB NEWS

Sandia's Safety Scoreboard

Sandia Laboratory:

19 DAYS
665,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:

92 DAYS
449,530 MAN HOURS
WITHOUT A
DISABLING INJURY