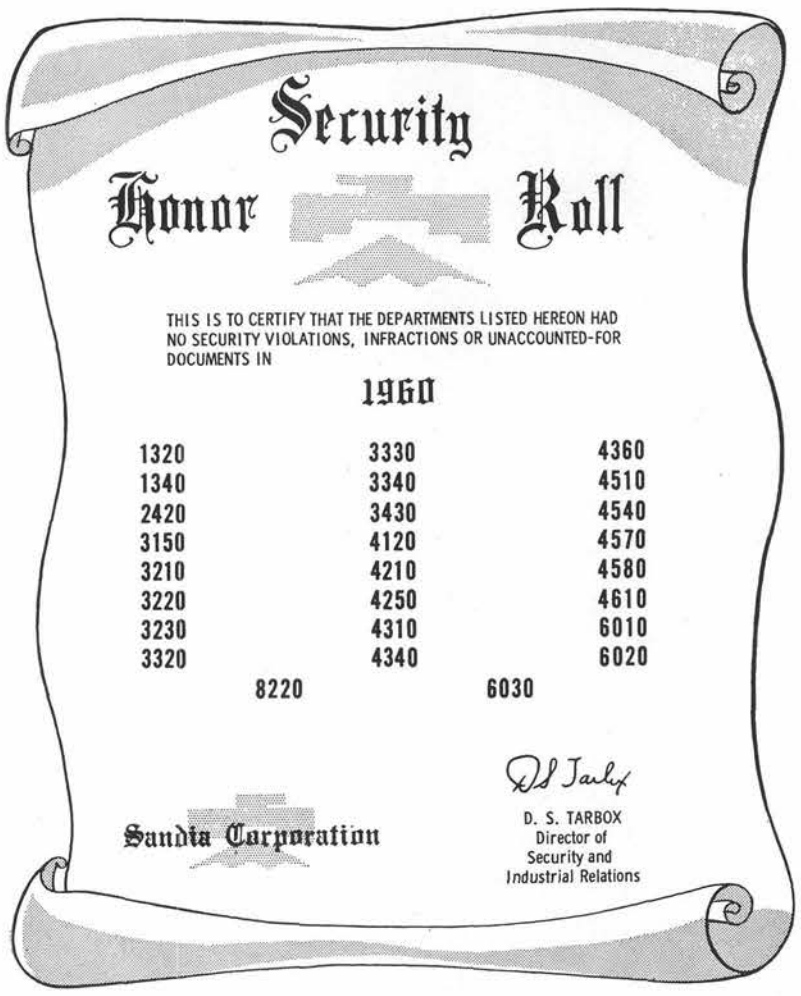

FIRST SECURITY HONOR ROLL was revealed today by Security Standards and Development Division 3231. The scroll shown above names the 26 departments at Sandia who had no security violations, infractions or unaccounted-for documents for 1960.

'60 Safest Year on Record for Sandia Laboratory Employees

The year 1960 was the safest year in the history of Sandia Laboratory. Fewer accidents occurred and less time was lost due to injury than in any previous year.

Safety Engineering Department 3210 released today statistics that show a tremendous accomplishment of employees at Sandia Lab. Expressed in terms of the "disabling injury frequency rate," Sandia Lab employees' record was .47 injuries per million employee-hours worked.

The "severity rate," another way of expressing the safety record, shows eight days lost due to injuries per million employee-hours worked.

The figures for 10 years ago, 1950, show a frequency rate of 6.82 and a severity rate of 120. Laboratory employees were suffering almost seven disabling injuries and losing 120 days for every million employee-hours worked.

An accelerated safety program began Jan. 1, 1951, to combat this injury record. The program marked its 10-year anniversary this month.

"Comparing the figures of 1950 to 1960 tells a story of successful safety effort on the part of all employees," A. B. Metzger, Department 3210 manager, says. "There has been a 93 per cent reduction in both the frequency rate and severity rate of disabling injuries."

The year 1960 saw several safety milestones for Sandia Laboratory. On July 11, Sandia Laboratory received the AEC all-time national safety award. Final safety record was 14,936,169 employee-hours or 417 days without a disabling injury. This record terminated on Sept. 6 when an injury resulting in three days lost time occurred at Salton Sea Test Base.

The AEC all-time national record trophy was followed by the National Safety Council's Award of Honor which was presented in recognition of Sandia's having achieved an all-time national safety record for industries in the same category performing similar types of work. Sandia surpassed two all-time national safety records in earning this award.

"Each employee played an important part in this outstanding accomplishment," Mr. Metzger says. "We are now starting a new year and since our people have demonstrated what can be accomplished, there is every reason to believe that it can be repeated."

Sandia Corporation
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ALBUQUERQUE, N. MEX. ● LIVERMORE, CALIF.
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Sandia Security Accomplishment Recognized on New Honor Roll

Sandia Corporation's first Security Honor Roll was unveiled today. Twenty-six departments were recognized for having no security violations, infractions or unaccounted-for documents during 1960.

This represents 27 per cent of the 95 departments at Sandia Corporation—25 out of 87 at Sandia Laboratory and one out of eight at Livermore Laboratory.

The departments are: 1320, 1340, 2420, 3150, 3210, 3220, 3230, 3320, 3330, 3340, 3430, 4120, 4210, 4250, 4310, 4340, 4360, 4510, 4540, 4570, 4580, 4610, 6010, 6020, 6030, and 8220.

Security Standards and Development Division 3231 originated the Honor Roll.

"If employees do not have a consciousness of the need for security, they constitute our most vulnerable danger area," the Security Education people say. "But when they are properly oriented, educated and trained, and are aware of the need for security, they provide the nation with its greatest safeguard."

The Division wanted to recognize those departments which have demonstrated that security-awareness is uppermost in their minds.

Although a few of the departments on the Honor Roll had no stations charged with document accountability and no safes to be left unlocked, they all had Q-cleared or "classified" people who could have been involved in a violation, infraction or missing document.

The entire organizations of the Director of Plant Engineering and Maintenance, 4500, and the General Attorney, Secretary and Treasurer, 6000, went through 1960 with no security violations, infractions or unaccounted-for documents.

Mr. DeSelm

Golf Association To Elect Officers

Members of the Sandia Employees Golf Association will meet in Bldg. 880, Room 100, during the noon hour on Feb. 3. Purpose of the meeting is to elect new officers and discuss plans for the coming golf season, according to Jim Leonard (7147), president.

C. H. DeSelm Named New Director Of Staff Services at Livermore Lab

C. H. DeSelm, Personnel Director, 3100, for the past two years, will transfer to Livermore Laboratory in the near future to become Director of Staff Services, 8200.

Mr. DeSelm was one of the first people sent to Sandia Base in the fall of 1945 to assist in setting up and operating a field test activity. At the time he was serving in the Navy, attached to the Manhattan Engineering District and assigned to Oak Ridge, Tenn., and Los Alamos.

After discharge from the Navy he was employed by the University of California at Sandia and was responsible for the design of special test aircraft modifications, the design of test and handling equipment, and several weapon system projects including warhead-missile applications.

Mr. DeSelm was promoted to department manager in 1950 and in July 1958 became Director of Surveillance and Operations.

While residing in Albuquerque he has served as a member of the Albuquerque Parks and Recreation Board for four years and served on the Albuquerque Personnel Board and the New Mexico Selective Service Advisory Committee on Occupational Deferments for Scientific and Professional Personnel. He is a past chairman of the American Society of Mechanical Engineers, Albuquerque section.

Flights not needed . . .

Sandia Determines Air Friction Temperature Electronically by Using Thermalog Computer

The "skin" of aircraft traveling at sonic and supersonic speeds becomes extremely hot due to air friction. The same applies to any weapon carried externally by the plane. This heat could cause a decrease in reliability of the weapon's components.

The extent of this aerodynamic heating can be established without putting a plane into the air through use of a Thermalog computer in Section 7183-3. The computer, designed and built at Sandia, is specially constructed to solve transient and steady heat transfer problems.

Work on the computer started here in 1957 when it was found that hand computation analysis of such problems took too long and there were no digital computer programs available to do the job. Sandia engineers decided a passive resistive-capacitator network analyzing facility could provide the speed, flexibility, and engineering accuracy required.

The original Thermalog could handle node problems with simple constant voltage boundaries. Under modifications and additions made by Philip L. Class (7183-3) and R. E. Hollenbach (7161-2) the system has been expanded to handle 80 node problems with the choice of eight time-variable boundaries.

The problems are programmed on a Sandia-designed plugboard which generates the network. The plugboard not only represents the problem, but also saves the problem for future rerun while at the same time allowing the computer facility to be free for running entirely different problems.

An interesting property of the electrical analog of the heat diffusion process is that time can be scaled so that minutes of analog simulation can represent seconds or hours of real time.

In some instances it is desirable to slow down the time process to better study a problem such as peeling off of protective coating in intense heat. In another problem the Thermalog computer can be speeded up to show the effect of temperature extremes on weapons in storage for a period of a week or longer.

According to Mr. Class, "The Thermalog differs from the usual analog computer in that it contains only resistive and capacitative elements and it is designed to solve a certain type of problem." Its advantage is that the person solving the problem can actually operate the computer and make his own changes and modifications to the circuitry.

THERMALOG COMPUTER, designed to make heat transfer studies, is operated by Betty Brake, Philip Class and other members of Section 7183-3. Plugboard to program problems is at left.

Another Communistic Weapon

Trade is becoming one of the most important weapons in the Soviet arsenal.

So reports the Institute for the Study of the USSR as it calls attention to the fact that in 1938 the USSR was in sixteenth place in world trade and today it is sixth. This, reports the Institute, is an impressive record for a state whose official philosophy finds distasteful the operations of the capitalistic system.

However, it is pointed out, that the Soviet Union is not engaged in trade for trade's sake. The trade mission and the technician are actually only running interference for the diplomat, the political agitator and the secret agent. The Soviets trade for the sake of profit — but not necessarily money profit. Political profit is even more important.

Before the war the Soviets traded with 40 foreign countries. Today they trade with 70.

The following countries of the West are the heaviest traders with the USSR: Finland, England, West Germany and France, in that order. Trade with the United States is now only negligible, amounting to only 104 million rubles in 1957. However, Khrushchev and Mikoyan have both indicated a desire to step up trade with U. S.

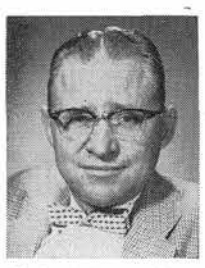
By trying to repair, increase, and strengthen their trade relations with economically developed countries such as those mentioned, and certainly the United States, the Soviets seek to win over business circles which would profit financially from such trade and to gain the sympathy of the workers by expanding opportunities for labor. In this way they hope to influence government policies.

While Iron Curtain weapons are being heard in the Far East it is important to remember that all communistic activity is not of the violent type.

Roland O. O'Trimble Died Dec. 31 After Lengthy Illness

Sandian Who Serves . . .

Roland L. O'Trimble, a Sandia employee for over 13 years, died Dec. 31 after a lengthy illness. He was 44.



Mr. O'Trimble was a Staff Assistant, Technical, in Project Division 7124.

Funeral services and burial were in Lawrence, Kan., on Jan. 3.

Survivors include his mother and two brothers, residing in Kansas, a married sister in Missouri, and nephew in Albuquerque, W. L. O'Trimble (4135).

Sympathy

To Carlos Ortega (4573) for the death of his mother-in-law on Jan. 3.

To Florenio Baldonado (4573) for the death of his mother on Jan. 9.

To Benjamin F. Lopez (4251) for the death of his father on Jan. 2.

Beverly McCroy (2631)

Take a Memo, Please

The more you hear of safety, the less you hear of accidents.

Night at Home Is Probably Unusual If You Are As Busy As Ed Peterson

This is another in a series of articles in the Lab News which tell of community activities of Sandia employees.

Between work, an important union office, and an active interest in politics, you might say that Ed Peterson's hobby is a quiet night at home with his family.

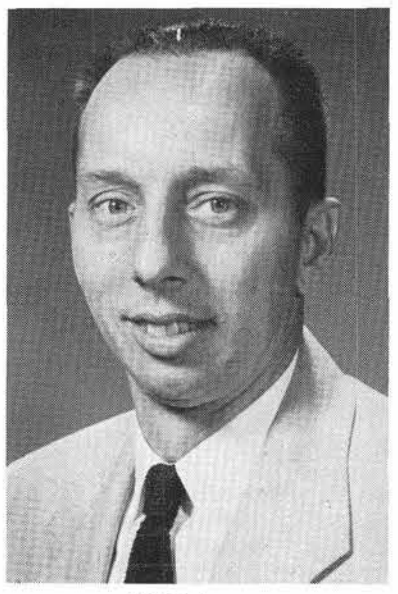
Ed is a model and instrument maker in Project Section 4253-2. He moved to Albuquerque from his native Ohio in July 1952 with his wife, Marion, and son, Rick.

Earlier this month Ed took office as president of the Metal Trades Council, which represents about 1200 members of 12 affiliated locals. He already has served two and a half years as vice president of the Council, and before that was president of Machinist Local 1689 for two years.

Union work is time consuming. "I average at least two hours a night on union activities, and many times it's closer to six," he remarked. The Council meets twice a month—each local has six delegates who attend, in addition to the elected officers—and there is considerable research reading for the president. The Metal Trades Council is the bargaining unit with Sandia Corporation representing the members of these 12 locals.

"We can receive help from the AFL-CIO's Metal Trades Department in Washington, but mainly the Council has been self-sustaining since it was established in 1949," Ed said.

When union work became too pressing Ed found he had to give up his post as Democratic Precinct chairman, which he had held for a year and a half. During the recent general election 93% of the registered voters in this precinct (No. 45) cast ballots—one of the highest figures in the county. "Both Democratic and Republican precinct workers deserve a 'hats off' for this response," he said.



Ed Peterson

Ed will continue as a committeeman in his own division. At the present time he is working with the new precinct chairman in planning bi-monthly discussion groups, similar to those set up under the Great Decisions program, to study state and national issues. Outside speakers and state legislators would be utilized in the program.

During recent years Ed has also been interested in state legislative matters.

"I used to be active in scouting when I lived in Ohio, but I have to leave that to my 12-year-old son now," he concluded

Brazilian Vacation

Alice Warder (3421-1), deeply suntanned and loaded with movies and slides, has just returned from a six-week vacation in Brazil. She flew to Panama, Peru, and then over the Andes to Sao Paulo, where her daughter and family live.

While in Brazil Alice spent several days in Rio de Janeiro where she enjoyed the beautiful beaches, magnificent buildings, and calypso bands.

Another trip took her to Guaruja, an island off the coast of Brazil. Ten years ago there was nothing there; now modern buildings line the coast.

To Appear on "Humanities"

Marcel Weinreich (3421-1) has been invited to participate on KNME - TV's program, "Humanities," on Jan. 23 from 8 to 9 p.m. Along with other guest speakers. Marcel will discuss views on medieval culture and its relationship to present-day culture.

Development Seminar To Have Speakers from Dow Chemical Company

Two talks on magnesium are scheduled for a meeting of the Sandia Laboratory Development Seminar Thursday, Jan. 26.

"Properties of Magnesium" will be given by Dr. T. E. Leontis and "Corrosion and Finishing Characteristics of Magnesium" will be presented by H. K. DeLong. Both speakers are associated with the Dow Chemical Co., Midland, Mich.

No tickets are required for the meeting, according to G. W. Anderson (5132), colloquium chairman. The meeting will begin at 9:30 a.m. in Bldg. 815.

Dinner Dance at Coronado Club Tomorrow Night

The Coronado Club's monthly buffet dinner dance will be held tomorrow night, Jan. 21, featuring Tommy Kelly's orchestra.

Buffet lines will be open from 6 to 8, followed by dancing from 9 to 1. Cost is $2.60 for members, $3.60 for guests.

The M.B.C. Trio will play for a club dance next Saturday night, Jan. 28, from 9 to 1. Admission price will be $1 for members, $1.50 for guests.

"Cattle Drive" is the free movie which will be shown for Family Nite on Sunday, Jan. 29. Cokes and popcorn will be served during the movie which starts at 6.

Bud Fischer's combo will entertain members and guests during social hour and the buffet dinner at the club tonight, and George Davies will be playing next week. Time for social hour is 5:15 to 6:45, with the $1.75 buffet served from 6 to 7:30. Music is provided for listening and dancing from 5:30 to 8:30. A 50 cent guest fee is charged for social hours.

BRIDGE PLAYER'S DREAM—a perfect seven no trump hand. However, the men pictured above had to depend on their skillful playing, and not perfect hands, to win the 1960 Sandia-AEC Employees Bridge League tournament. They are (l to r) Bill Jobe (4511), seated, George Arnot (1422), Tom Laney (7241) and Jim Hann (2632). Winifred Fellows (3126) was unavailable for picture.

Livermore Lab's Classified Chords Elect New Officers

New officers were elected at a reorganization meeting held recently by the Livermore Laboratory choral group, the Classified Chords. Installed as new president was John Tanner (8225-3), with Sharon Watson (8212-1) as vice president.

Others elected were Dotty Stewart (8225-3) secretary, Helen Bond (8161-1) treasurer, Alyce Loveless (8114-3) publicity, Don Werner (8122-1) membership, and Dave Kirk (8114-3) property.

The chorus is under the direction of Ellen Cunningham (8233-2) with Elvis Skidgel (8122-2) assisting. Accompanist for the group is Hal Norris (8121-2) assisted by Lucinda Reeves (8212-5).

Assist Families

Members of Divisions 4621 and 4622 have donated $35 to a family that lost four children and their home in a fire at Los Lunas, N. M.

Los Lunas firemen, Post 85 of the American Legion Auxiliary at Los Lunas, and other civic organizations and individuals are also helping the family.

Scouts Need Help

Explorer Scout Post 286, sponsored by St. John's Methodist Church, has selected amateur radio as their post specialty and are in need of electronic parts for experimentation and circuit building.

Anyone having such parts or equipment in their personal shops, which they would be willing to donate, are asked to call the explorer advisor, T. W. Moody (1432), at AX 9-5488 after 5:30 p.m.

Bridge League Sponsors Duplicate Session at Coronado Club Jan. 30

Sandia-AEC Employees Bridge League is sponsoring a free duplicate session at the Coronado Club, Monday, Jan. 30, beginning at 7 p.m.

Cash prizes, trophies and refreshments will be provided, according to Mike Levesque (7243), current director of play.

The bridge league, which meets every Monday night from 7 to 9:30 at the Coronado Club, plans to hold three tournaments during 1961. Cash prizes are awarded each week, and every six weeks a trophy will be given to the player with the highest average. Cost for playing is 50 cents per evening.

There are 13 five-man teams in the league, all named after famous bridge players, and 11 teams competed in the 1960 tournament to determine the champion team.

Services and Benefits Division 3122 provides trophies and cards for the league since it is Corporation-sponsored. Phil Arnold (3453) is president of the group and can answer further questions.

Artist Terrence Clark Has Show of Work At Lobo Arts Theater

Thirty-three paintings of Terry Clark (3463) are being exhibited at the Lobo Theater during January.

For his one-man show, Terry chose paintings representing all mediums, including charcoal, oil, water color and pencil. Most of his pictures are portraits or New Mexico landscapes.

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"YOU FIGURE it's never going to happen to you," mused Lawrence Denison as he revisited his smashed automobile. His story of a broken neck, long days in the hospital and slow recuperation is grim, but forethought resulted in a happier ending. Accident occurred last Nov. 17 in Tijeras Canyon.

There's a silver lining . . .

Drop Over 50-ft. Embankment Causes Costly, Painful Wreck

"You never figure it's going to happen to you. You read the statistics. You watch the ambulances go by, but you say it's not going to happen to you. Then, when you least expect it, there's another car in your lane coming like crazy right at you."

Lawrence E. Denison (4614-2) reminisced with these words as he looked at the junked remains of the car he was driving last Nov. 17. As he talked his hand rubbed the collar brace around his neck. The accident occurred about 6:30 in the evening as Larry was driving to his home in Tijeras Canyon.

"This guy must have pulled onto the highway from a side road on the right. He turned onto my side of the road and started toward town. It was a very dark night and I didn't see him until he turned on his lights. He was right in front of me."

In a split second Larry swerved his car to the right and avoided a head-on collision, but his wheels had gone into the soft shoulder off the road bed and the car was out of control. It plunged over the side, dropped 50 ft., flipped completely over and came to rest on its wheels. Larry was thrown out the right window of the car and suffered a broken neck.

Hospitalized

Larry spent 16 days in the hospital. The broken neck required surgery. He was off work from Nov. 18 through Jan. 3.

Total cost of his hospitalization and surgery was right at $1100. Of this, Sandia Corporation's Health Care Plan paid $900. During the time he was off work his paycheck from Sandia Corporation kept coming regularly.

"And to think," Larry says, "that a few weeks before the accident I was thinking about cancelling my Health Care Plan. Luckily my cousin, Muriel Denison (3126/2330), convinced me to keep it."

Larry had signed up for Health Care coverage when the plan was first offered in May 1958. He had never filed a claim.

"I'm convinced now," Larry says, "that no one can afford to be without this kind of protection."

Larry's experience is the kind of financial emergency that Sandia's Health Care Plan was designed to take care of—major medical expenses resulting from catastrophic illness or serious injury.

Employees Protected

Some 6400 Sandia Corporation employees are currently protected by the Health Care Plan. In addition to the amount the employee pays, Sandia Corporation contributes $2.80 monthly for each employee toward the cost of the Health Care coverage.

All employees accrue sickness absence credits at the rate of one and one half days per month during which pay is received for at least 90 straight-time hours. Maximum accrual is 90 days which is 18 weeks of full pay if the employee suffers a prolonged illness or injury. Total 1960 sickness absence payments by Sandia Corporation to employees are estimated to be $1,110,000. (Year-end figures are not yet complete.)

"To me," Larry Denison says, "Sandia's Health Care and Sickness Absence benefits mean more than that. During the time I was off work and in the hospital, I didn't have to worry about the bills. I could concentrate on getting well."

Credit Union Directors Vote 5½ Per Cent 1960 Dividend

A five and one half per cent dividend on share savings was declared last week by the Sandia Laboratory Federal Credit Union Board of Directors. This will add $274,900 to the share balances of the 7230 members of the Credit Union.

Total assets of the Credit Union have reached $7,009,800. This is nearly a $1 million increase over assets of 1959.

Some 10,000 loans totaling $11,069,000 were made to members during the year. In the twelve years of Credit Union operation, 51,000 loans have been made for a total of $37,450,000.

Annual meeting of the Credit Union members is scheduled Thursday, Jan. 26, at 7:30 p.m. in the Coronado Club. Members will elect new directors and committeemen as well as hear year-end reports of 1960 committees and officers.

Credit Union Directors have urged all members to attend the meeting and participate in a discussion of future plans, new services and policies for the Credit Union.

Refreshments will be served after the meeting.

Sandia Lab Softball Association Standings

After one complete round of play, basketball standings for the 1960-61 season are as follows:

Team	Won	Lost
4400, 4500, 4600, 5100, 6000	6	1
1300, 1400, 7100, AEC	5	2
4100, 4200, 4300	4	2
1100, 5400, 7200, 7500	4	3
2400, 2500, 2600, 2700	3	3
3400-II	3	4
3400-I	1	6
7300	1	6

The ten highest scorers in the league, having played in at least four games, are: Ken Flynn (7164), 17.8; Frank Comiskey (6021), 14.0; Lou Sanders (5151), 13.2; Bob Hedges (2716), 12.3; Leo Chavez (3464), 11.6; Jim Sanchez (4574), 11.0; Al Brazda (7243), 10.1; Bob Banks (4151), 10.0; Phil Loeper (4412), 9.8; and Ron Flury (7145), 8.6.

At Sandia Laboratory

New Courses Are Offered in Out-of-Hours Class Program

Eighteen new courses will be offered by the Sandia Laboratory Out-Of-Hours educational program when enrollment begins Monday, Jan. 23. Classes for the 1961 spring semester will begin the week of Feb. 6. A supplemental bulletin announcing the class schedule and containing enrollment cards is in the Sandia Laboratory booklet racks.

Enrollment procedure is the same as in previous semesters. Employees desiring to take a course must fill out an enrollment card, secure their supervisor's signature, and turn in the card to Technical and Trades Training Division 3132.

Of the new courses scheduled, four will be offered using the Programmed Self Instruction method. Teaching of these courses is done by a written program to which the student responds by answering many carefully prepared questions. Immediate feedback whether his answer was right or wrong is given also by the program.

Courses to be offered utilizing the PSI technique are Russian (PSI), Basic Statistics (PSI), Statistical Influence (PSI) and Math A (PSI).

Other new courses include A. C. Fundamentals, Complex Variables, Effective Speaking, Engineering Analysis, Manufacturing Processes II, Mathematics II, Mechanisms, Physics II, Statics, Power Sources and Rotating Machines, Product Design for Manufacturing, Survey of Transistor Applications, Technical Report Writing and Tool and Gage Design.

Schedules of classes and additional information are available from Division 3132, ext. 47255 or 25247, Bldg. 813.

Discussions' findings useful . . .

'Great Decisions' Consensus Reported To Groups Forming Foreign Policy

Fact sheets are now available for the eight foreign policy issues to be discussed in the program: "Great Decisions—1961."

This will be the third year that Albuquerqueans have participated in "Great Decisions," an annual community study and discussion program of major United States foreign policy issues. The plan of the nationwide program is to organize small neighborhood groups to meet once a week for eight weeks. These groups discuss selected topics to promote better public understanding of critical international issues.

At the end of each weekly discussion, group members express their opinions on "opinion ballots" which are included in the fact sheet kits. These ballots are forwarded to Albuquerque's Great Decisions Committee, P.O. Box 814.

Ballots Tabulated

The ballots are tabulated and results are sent to New Mexico's congressmen, the Democratic and the Republican National Committees, the Senate Committee on Foreign Relations, the House Committee on Foreign Affairs and the Department of State.

Fact sheet kits, which cost $1.50, may be purchased at the Albuquerque Public Library and the three branch libraries or in Bldg. 829 from Services and Benefits Division.

These kits include an introductory booklet, a fact sheet of basic background information on each of the subjects to be discussed, opinion ballots, a bibliography on each topic area, and tips for leading or taking part in a discssion.

Eight Topics

This year's program begins on Feb. 5 with the following topics to be discussed during the ensuing eight weeks: "Deadlock Over Germany," "Soviet Challenge & World Leadership," "France & Western Unity," "Japan—Future of an Asian Ally," "UN in Explosive Africa," "The Americans in Jeopardy," "Arms & Survival," and "Blueprints for the World Economy."

As in the past the Great Decisions program is being supported locally by civic organizations, the Albuquerque Public Schools, the University of New Mexico, various churches, several women's clubs and others.

Sandians interested in participating in discussion groups or helping to organize groups are urged to contact T. B. Sherwin, ext. 26150, or J. G. Marsh, ext. 28271.

SOUTHWESTERN LANDSCAPING recently completed around Bldg. 860 is enjoyed during break period by (l to r) Eloisa Tabet (7321), Ethel Lonner (7312) and Barbara Reeder (7310). At far right is Ben Jaramillo (2643-2). The project is part of a continuing program of general landscape improvement conducted by Sandia Laboratory's Labor Support and Grounds Maintenance Division 4575.

Supervisory Appointments

MELVIN A. McCUTCHAN to supervisor of Technical and Trades Training Division 3132, Personnel Research, Training and Education Department.

Mel started working for Sandia Corporation in February 1951 as a layout operator in the Electronics and Standards Department. He left a year later to enter business for himself, but returned a few months later as a staff technician in Division 1431. In 1953 Mel transferred to Wage and Salary Administration Department and two years later he was promoted to section supervisor. He transferred to the training organization in June 1959.

Prior to coming to Sandia Mel operated his own electronic repair and sales business for three years in Tuyallup, Wash. During part of this period he also taught electronics at the Tacoma Park Vocational School in Tacoma, Wash.

He was principal and a teacher at a junior high school in Fir Grove, Wash., before serving three years in the Air Force as an instructor in electronics.

Mel received his BA degree from Pacific Lutheran University and is a member of the American Institute of Industrial Engineers.

HOWARD R. SHELTON to supervisor of Technical Training and Education Section 3132-1, Technical and Trades Training Division.

Howard was with Sandia's Quality Assurance organization for seven years, serving as a section supervisor for four and a half years. In August 1959 he transferred to Division 3132 to help set up a technical institute training program.

Before coming to Sandia he taught math and science for three years at a junior high school in Austin, Tex.

Howard received his BS in math and Master's degree in administrative education from Southwest Texas State Teachers' College and completed some work toward a PhD degree at the University of Texas.

During World War II he served three years in the Marine Corps.

ALVIN E. KAPING to supervisor of Supplier Relations and Evaluation Section 4332-1, Supplier Development and Purchasing Practices Division.

Al has been at Sandia six years working first in the Industrial Engineering Department (now part of Manufacturing Development). During his three years in Purchasing Al has helped set up supplier evaluations.

Previously he was with Lockheed Aircraft in Burbank, Calif., for four years as a manufacturing engineer.

Al received his BS degree in industrial engineering from Texas Technological College. He is a registered professional engineer in New Mexico, is past president of the Albuquerque Chapter of the American Institute of Industrial Engineers, and is a member of the Society of Professional Engineers.

During World War II Al served three years in the Navy.

JOE W. WISTOR to supervisor of Underground Instrumentation Development Section 7251-3, Seismic and Test Effects Division.

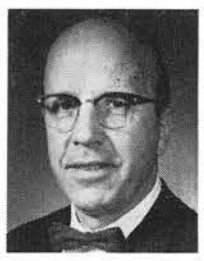
Joe has been working with gauging, recording and telemetering systems in connection with full-scale field testing since he came to Sandia in June 1952. He participated in Operations Ivy, Castle, Teapot, Upshot-Knothole, Redwing, Plumbbob and Hardtack Phase II.

Previously he worked two and a half years for the U. S. Naval Ordnance Test Station at Inyokern, Calif.

Joe has a BS degree in physics from the University of New Mexico and is a member of Kappa Nu Epsilon, honorary society.

He served in the Navy from 1944-46 in the fleet air wing.

KENNETH R. DICKERSON to supervisor of Project Section 4254-2, Mechanical Department.



Ken's first job with the Corporation in August 1951 was as a milling machine operator in the machine shop. Three years later he became a layout operator. In 1955 he transferred to the Physical Standards laboratory.

For the past two years Ken has been with Trades Training and Education Section 3132-2 as administrator of apprentices.

Prior to coming to Sandia Ken was with the Picatinny Arsenal in Dover, N.J., for 15 years. There he learned the tool die and machine gauge trade, was an instructor in the apprentice shop, was an assistant supervisor in the machine shop for two years, and was supervisor of the apprentice school at the time he left.

Promotions

Eddie S. Garcia (3466) to Document Clerk
Jack D. Burt (4411) to Draftsman
Palmer D. Landis (4413) to Draftsman
Wilbur E. Boyd (1332) to Staff Assistant
Malcolm H. Woodward (7311) to Staff Assistant
Blake J. Liston (7322) to Staff Assistant
Joseph J. Bradshaw (7322) to Staff Assistant
Ralph T. Laws (7322) to Staff Assistant
Robert G. Hauff (8114) to Staff Associate
Thurman Foreman (4574) to Janitor
Gerald L. Williams (3462) to Bindery Operator
Judy G. Siede (3126) to Secretarial Steno.
M. Nadine Sheppard (3126) to Secretarial Typist
K. H. Preston (3421) to Library Assistant
Jack J. Anderson (3461) to Document Clerk
Marie F. Hord (4333) to Senior Clerk
Jean A. Horvath (7241) to Mathematics Analyst
Jerald W. Long (7241) to Mathematics Analyst
Jean A. Van Fleet (7241) to Mathematics Analyst
Alan L. Richards (8232) to Reproduction Equipment Operator
Ruth E. Bontrager (3153) to Employment Clerk
Lucinda Reeves (8212) to Typist
Betty L. Baumgarten (3153) to Employment Clerk
Ciriaco Herrera (4573) to Utility Man
Robert F. Scalf (4234) to Technician
Judith D. Glass (3153) to Typist Clerk
Arlene M. Blazek (3466) to Document Clerk
Graham H. Luhn (2752) to Laboratory Assistant
Mary R. Mayes (5432) to Staff Assistant
Nancy J. Orendorff (5425) to Calculating Machine Operator
Owen G. Lockwood (4542) to Requisition Service Clerk
Kenneth R. Ludwick (7322) to Laboratory Assistant
Ben B. Conklin (7322) to Laboratory Assistant
Laverne E. Scott (2620) to Secretary
Mary L. Hauer (5432) to Laboratory Assistant
Arlen R. Baldwin (1332) to Laboratory Assistant
Wayne Cottingham (1331) to Laboratory Assistant
Louis Baca Flores (7321) to Laboratory Assistant
Stanley R. Pickens (8234) to Order Analyst

Supervisory Lateral Transfers

L. G. Spohr from 4413-3 to 4411-3
Q. F. Simon from 4411-5 to 4413-3
J. Suknot, Jr., from 4411-3 to 4411-5
P. D. Bishop from 3466-2 to 2641-3
J. C. Russell from 1122 to 1121
R. E. Fisher from 1121 to 1122
J. W. Benson from 4321 to 4325
E. B. Bergquist from 4325 to 4321
D. E. Irvin from 3125 to 3126
J. R. Piper from 7146-2 to 7183-2
C. J. Mauck from 7147-2 to 7214-2
R. R. Moore from 7183-2 to 7147-2
A. J. Clark from 5433 to 7125
V. E. Blake from 7125 to 7163
D. H. Winner from Secruity Sergeant 3242 to 3241-1
J. G. Hawley from 7212-3 to 7221-1
L. F. Denton from 7511-3 to 7512-1

Work to Be Done On Underground Electrical System

Apparent low bidder on a contract to modify the underground electrical system of Sandia Laboratory's Tech Area I is Reynolds Electrical and Engineering Co. of Albuquerque. The firm's bid of $82,308 was the lowest of three received by the Atomic Energy Commission.

The project will include installation of government - furnished equipment. Work is to be completed within 100 days after the contractor receives notice to proceed from the AEC. Vern Easley (4543-1) is the Plant Engineering project engineer.

Welcome Newcomers

Jan. 3-13

Albuquerque
*Elaine M. Burton 4212
Mary Ann Cowley 3126
Carolyn B. Eckart 3126
Peggy S. Evans 4333
*Beverly H. Foster 3421
William R. Geck 3462
James A. McFadden 7244
Wesley R. Pfarner 7232

Georgia
Howard William Bird, Atlanta 5431

Illinois
Ronald G. Husa, Worth 1332

Virginia
*Raymond R. Shenk, Woodbridge 4411

New Hires at Livermore—Dec. 3-Jan. 13
Roger L. Busbee, Livermore 8232-3
Richard V. Gray, San Francisco 8123-3
Judith M. Griffith, Fremont, Calif. 8212-5
Alan A. Hubinger, Seattle, Wash. 8122-4
*Elizabeth H. Juck, Livermore 8121-1
Melba A. Purvis, Livermore 8212-3
Janice D. Reinstein, Livermore 8212-3
Alvin F. Rowe, Fort Worth, Tex. 8123-1
Robert H. Schultz, San Diego, Calif. 8124
Robert E. Snapp, Des Moines, Iowa, 8114-1
* Denotes Rehired

Returned from Leave
David E. Arnett, Livermore 8222-2
Carlton M. Burnberg Corvallis, Ore. 8151-1
Patricia A. Beavers, Livermore 8212-3
Mary E. Hurst, Albuquerque 3466
Sabrina R. Campos, Albuquerque 3466
Adelina Lucero, Albuquerque 3126

The Calendar

Jan. 23

National Society of Professional Engineers
American Legion Hall
Social Hour: 6:30 p.m.
Dinner: 7:30 p.m.
Speaker: Mr. Palmer, Executive Director, New Mexico Petroleum Industries
Topic: "Petroleum Industries' Feeling Towards Gas Taxes and Highways"
For reservations contact
Walter Scott (7184), ext. 28253

* * *

Jan. 24
Institute of Radio Engineers
Coronado Club
Social Hour: 6:30
Diner: 7:30
Meeting: 8:30
Speaker: Bob Werner, Vice President and General Manager, Cubic Corp.
Topic: "World Mapping with Satellites"
For reservations contact
Nick Bourgeois (1414), ext. 54153

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This information compiled by the New Mexico Council of Technical and Scientific Societies.

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Livermore Technical Calendar

Jan. 26

San Francisco Sections
American Society of Mechanical Engineers
American Institute of Electrical Engineers
Joint Meeting
Engineer's Club, 206 Sansome St.
San Francisco
Assembly: 6 p.m.
Dinner: 6:30 p.m.
Meeting: 8 p.m.
Speaker: Everett D. Howe, Mechanical Engineering Professor, University of California
Topic: "Fresh Water for the Future"
For reservations contact East Bay, TH 5-6000, ext. 3458; San Francisco SU 1-5720

Sandia TV Camera Being Used at Idaho NRTS Following Accident

A radiation-tolerant, closed circuit television camera system has been sent by Sandia Corporation to the National Reactor Testing Station, near Idaho Falls, Idaho, for use at the nuclear reactor where an accident occurred recently.

Don N. Todd, of Sandia Laboratory Radiation Effects Department, went to Idaho Falls on Jan. 8, to operate the TV system and offer any possible assistance.

The camera was lowered through a small diameter opening in the top of the reactor's pressure vessel to look at the reactor core in an attempt to learn what caused the incident.

Remotely Lowered

A 40-ft. boom was used to remotely lower the camera, which will also be remotely controlled.

The closed circuit TV system was developed recently by Sandia Laboratory and Neely Enterprises.

The Kintel TV camera is equipped with special lenses that resist darkening by radiation, and the system's electronic parts are specially designed so that they will continue to operate when exposed to radiation. The camera is enclosed in a water proof case, and was designed for the purpose of underwater viewing of an operating nuclear reactor.

Special Camera

The special camera, only 5½ inches in diameter and about 14½ inches long, is being used at the Idaho reactor to scan the contaminated area and to examine the reactor. Earlier attempts to use regular TV cameras for this purpose failed due to the effects of the radiation on the cameras.

The TV system will be used during normal operation of the Sandia Engineering Reactor Facility (SERF), currently under construction at Sandia Laboratory.

For Livermore Lab . . .

Work Starts Soon on New Facilities At Recreation Ass'n Swimming Pool

Work is scheduled to begin soon on new recreational facilities at the Radiation Lab Recreation Association (RLRA) swimming pool to be available to members and their families when the pool opens for family use May 6.

The proposed facilities and new rate schedule for the swimming season will be discussed Jan. 24 during a noon-hour meeting in the second floor conference room of Bldg. 911. Swimming pool members and interested employees are invited to attend this meeting and others to be held Jan. 27 and Feb. 2 at the Lawrence Radiation Laboratory auditorium. Interested employees may also visit the pool which is now open for inspection.

Among the new facilities to be discussed at the meetings will be a proposed concrete patio next to the pool building, a 20 by 20-foot wading pool, play and picnic area, and volleyball courts.

"Work on these facilities will begin as soon as funds are available," according to Charles Johnson (8151-2), Sandia representative on the RLRA Pool Committee. He announced also that memberships are now being accepted for the new season—Jan. 1 through Dec. 31—and he urged interested employees to join now to provide the necessary capital.

"As an added inducement," he said, "10-admission guest tickets are now on sale at a reduced rate, offering savings of $1.50 per book for adults and $1.00 per book for children."

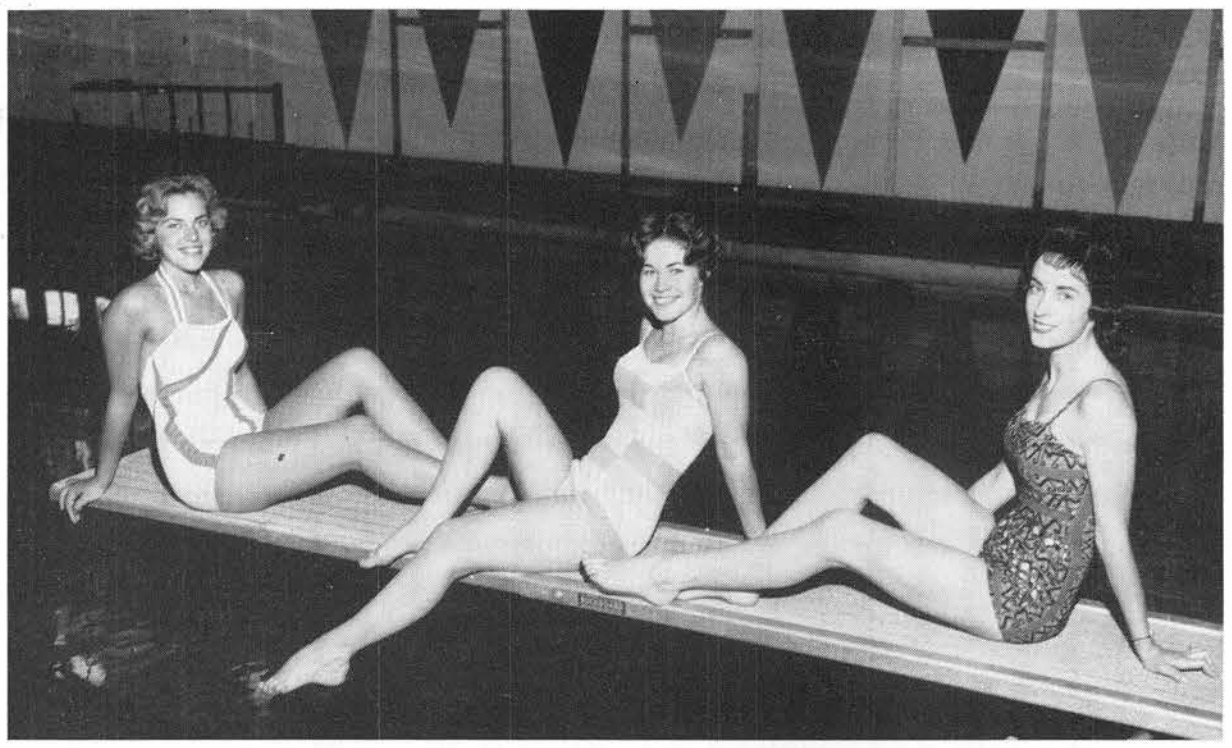
As a result of a change in fiscal operations, new swimming pool annual memberships will be valid from Jan. 1, 1961, through Dec. 31, 1961. Charter memberships purchased last year will be valid through June 1961. Charter members may extend their current memberships through December at a cost of $30 for family memberships or $15 for individual memberships, Charlie said.

New membership rates established by the pool committee for the current season are as follows:

Family membership, $40 per yr.
Individ. membership, $20 per yr.
Guest Admission (regular price)
Adult
Book of 10 admissions, $7.50
Individual admissions, $1
Child (12 years old or less)
Book of 10 admissions, $3.50
Individual admissions, $ .50

Guest tickets may be obtained now at the reduced rate from George Ruzicka (8144-1), Art Thomas (8161-2), Tom Brumleve, (8151-2), George Sage (8155-2), Ken Mitchell (8141-2), and Charles Johnson (8151-2). Checks for family and individual memberships should be sent to George Ruzicka. All checks should be made payable to the RLRA Pool Fund.

Beginning May 6 the pool will be open for family use, but employees who are members may use the pool now during noon hours. During the family swimming season the pool will be open after working hours through Memorial Day and from Labor Day until Oct. 29. Between Memorial Day and Labor Day the pool will be open daily from 12 noon to 8 p.m. and earlier on weekends, according to the pool committee.



COME ON IN, the water's fine, say (l to r) Barbara Dolstra (8212-3), Janice Long (8116-3), and Lois Knudson (8212-5), as they offer a glimpse of the RLRA pool facilities. Plans to open the pool for the 1961 season are now being made by the RLRA Pool Committee. Pool memberships are on sale now.

THE TERRACED SITE for new houses to be occupied by Sandia's Tonopah Test Range personnel is examined by R. D. "Bob" Statler, division supervisor of Test Range Division 7212. Sandia families will occupy the new homes in March. The site is located at the southwest edge of town.

Sandians Find Tonopah Living Opens Different But Good Life

It was just 61 years ago that a ragged, destitute rancher in Nevada picked up some pieces of quartz that were heavily stained with metal. The assay on the rock named that metal to be silver, and well over $50 million profit came from this find of the rancher named Jim Butler.

A town sprang up by Butler's mine and became the center of one of the richest mining areas in the west. The town, named after a nearby spring, was called Tonopah, an Indian word meaning "water brush" or "little wood, little water."

The fabulous richness of Tonopah and the nearby town of Goldfield (which witnessed a yield of almost $100 million in gold from its mines) lasted only some 15 years. But during those few years (1900-1915) there was splendor that sharply contrasted with the bleak, barrenness of the surrounding Nevada wastelands.

White ties and tails, evening gowns, furs and sparkling jewels graced the couples of the community who dined nightly on pheasant-under-glass and enjoyed classical music played by the finest musicians in America.

Riches Disappear

Slowly the lodes of rich ore were exhausted, and Tonopah seemed destined to become a ghost town, but instead, unlike so many of the mining communities of Nevada, it became a distributing center (and the county seat) for Nye County, the third largest county in America.

Helping to stabilize the present-day economy of Tonopah and contributing to its community life are 18 Sandia employees and 45 members of their families: these Sandians maintain the AEC's Tonopah Test Range (TTR).

To a visitor, Tonopah is just another old, ramshackle, weatherbeaten mining town — similar to the small mining towns of Colorado or western Pennsylvania. Main Street, which bisects the town, is a mile-and-a-half section of U. S. Highway 95 which is the major route from Las Vegas to Reno.

The two square miles of Tonopah rest upon the hills adjacent to the north-south highway. Main Street is lined with small shops, cafes, bars, a movie house, a newspaper office, a post office, some motels, a five-story, square-shaped hotel, and—being in Nevada — gambling casinos.

Belying the rough exterior of the town, the people of Tonopah are warm and sociable. Tom Earp (who is an electronic technician at TTR), his wife Lillian and their four-year-old daughter have lived in Tonopah for about a year and a half. They are enthusiastic about the town, and comment, "The folks here are friendly and quickly accepted us as part of the community."

Small Town Life

Certainly, Tonopah (as is probably true with most small towns) takes a while getting used to, but as Al Bolles (an electronic technician at TTR) said, "In general, those people who are mature in their thinking, carefree, or who come from small communities find Tonopah easy to accept."

A long-standing problem for Sandians at Tonopah—the housing situation—will soon be solved. The small town of less than 2,000 people was hardly able to provide suitable dwellings for the influx of families from Salton Sea Test Base and Albuquerque. Rents were high and most of the houses were in poor condition.

By March of this year most of the families of the Sandia employees will be moving into two-bedroom duplexes or four-bedroom homes. The homes were moved to Tonopah from a Navy depot in northern Nevada under AEC contract. The 29 structures, containing about 42 homes, are situated on a terraced site overlooking the town from the southwest.

This housing area is adajcent to Tonopah's new school buildings, which will be opened before the end of the current school year. About 414 children are enrolled in classes from kindergarten through 12th grade.

Commenting on the quality of education offered, Bob Statler (division supervisor at TTR and father of four school-aged youngsters) said, "I have found the Tonopah schools are providing a fine opportunity for my children."

The variety of recreation activities for children and adults in Tonopah is somewhat limited—certainly when compared to the offerings of Las Vegas, 220 miles to the southeast. The opening of a modern, 8-lane bowling alley in late January is eagerly awaited by all residents. Dances and social activities are regularly sponsored by such Tonopah groups as the Masons, Lions, Rotary, VFW, 20-30 Culb, Elks and Beta Sigma Phi (a women's group). And, for those who like the outdoor life, hunting areas and fishing streams are within 50 miles of Tonopah.

All in all, as Bobby Edwards (supervisor of TTR's Instrumentation and Facilities Section) put it, "The town's activities are many, and it's a pleasant place to live—once you get settled."

NEW SCHOOL BUILDINGS in Tonopah provide a suitable setting for this picture of Al Bolles. Al has four children, three of whom will be attending classes in the new buildings next fall.

Photos of Tonopah and TTR in this and the Jan. 6 issues of the LAB NEWS were taken by T. N. Earp (7212-1).

Sandia Linguist Marcel Weinreich Authors Self-Taught Russian Course

Chief consultant for a beginning Russian course which has been developed by Teaching Machines, Inc., is Sandia's scientific translator, Marcel Weinreich (3421-1). The course utilizes the Programmed Self Instruction method of teaching, and is the first of its kind to be offered in the Southwest.

"The Russian language course is 400 pages long, and will take only 18 to 20 hours to complete," Marcel says, "depending on the student."

R. F. Utter, of Personnel Research Section 3133-1, acts as liaison between Sandia Corporation and Teaching Machines, Inc., which is located in Albuquerque. When the company decided to develop a Russian language course, Mr. Utter was asked to suggest a person who would be qualified to supervise the programming of such a textbook. He recommended Marcel who got the job.

Russian is one of Marcel's three native tongues. He is fluent in seven languages and has a working knowledge of five other languages.

Marcel is presently teaching Elementary and Advanced Technical Russian to employees four noon hours a week. This new "automated" course will take the place of the introduction in Marcel's first semester basic course. The student can then join a more advanced Russian class which Marcel teaches.

"This basic Russian course is the first major non-technical program to be offered by Teaching Machines, Inc.," Marcel says. "The company plans to develop other language courses, including Spanish, German and French," he added, "and I have been asked to continue as consultant for these books, too."

A national encyclopedia publishing firm has just signed a contract with Teaching Machines, Inc. to handle nation-wide and foreign distribution of the PSI language courses.

Technical and Trades Training Division 3132 is offering the PSI Russian course in its Out-of-Hours curriculum for employees this coming semester.

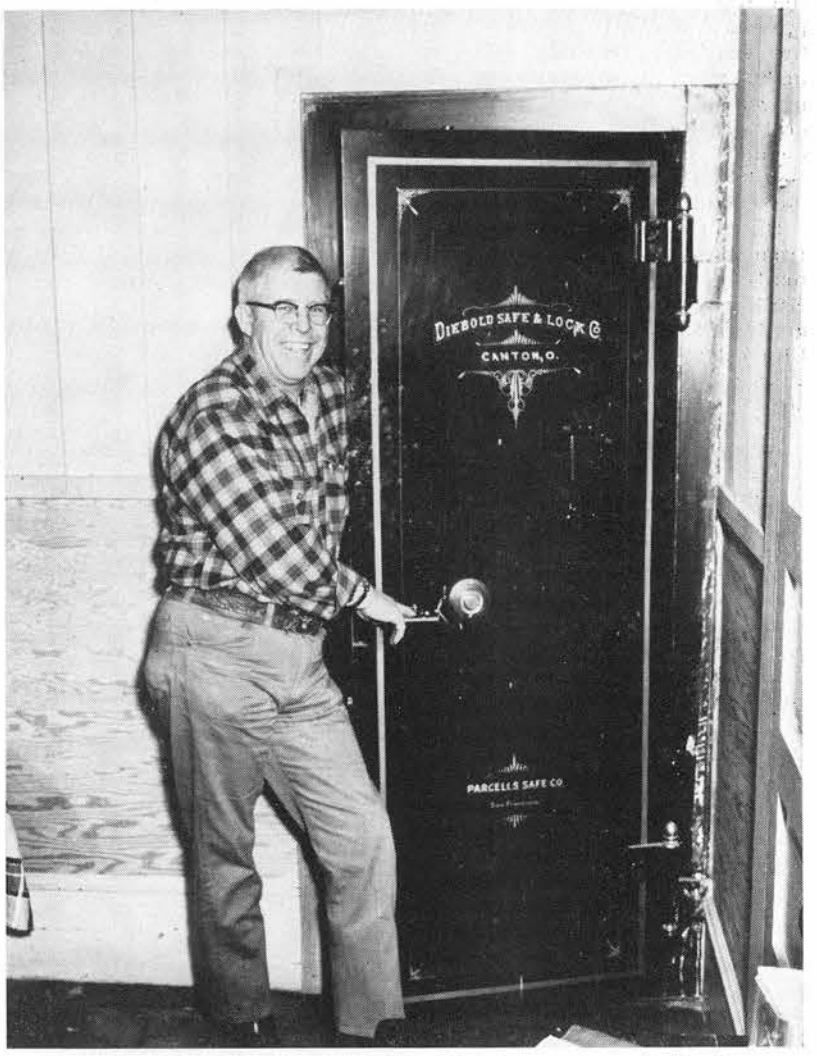
Livermore Laboratory Year-End Statistics Show Much Change

Payroll figures at Livermore Laboratory for the past year were up considerably over the previous year, according to figures released today.

Payroll for the year was $7,300,000 compared to $4,168,000 for 1959. Total number of employees on roll at the end of 1960 was 934.

Purchasing activities also increased. A total of 11,723 orders, valued at $8,580,000, were placed with commercial firms during the year. Seventy per cent of these orders were placed in the Bay Area. In 1959 a total of 9,000 orders, valued at $7,485,000, were placed.

Year-end statistics also showed that 80 per cent of Sandia employees were residing in the Livermore-Pleasanton area with the remainder living in neighboring communities.



SAFER THAN MOST CLOSETS is this storage room in the house occupied by K. W. "Val" Vallely in Tonopah, Nev. The safe, installed in the early years of the 1900's, is in Val's bedroom.

TYPICALLY TONOPAH is the home of Lloyd and Joyce Young and their two children. Lloyd is shown leaving to catch the AEC bus for the 40-mile ride to the Tonopah Test Range.

Two Sandia Lab Employees File as Candidates for Local School Board

Charles W. Allen

Paul R. Kintzinger

Two employees at Sandia Laboratory are among candidates running for a vacancy on the Albuquerque Board of Education which will be filled by election Feb. 7. They are Charles W. Allen (2313) and Paul R. Kintzinger (5112).

Mr. Allen has been at Sandia since 1954 in the Weaponry Training Department. Prior to coming to Albuquerque he taught at Southern Illinois University. In addition to his teaching duties, he served as a consultant in planning school buildings, and also was a faculty advisor to students in engineering and scientific fields.

During 1959 and 1960, Mr. Allen was a Sandia Corporation representative on the Vocational Study Committee for the Albuquerque Public Schools. Purpose of the committee was to consider present and long range area needs for vocational training, and to make recommendations for improvements in the curriculum. Several of the recommendations of committee have now been incorporated into the public school curriculum.

He received his Master's degree from the University of Illinois and his Bachelor's degree from Southern Illinois University. While doing graduate work at the University of Illinois, he was a member of the staff and did research in the area of industrial education.

A Sandia employee for seven months, Mr. Kintzinger is a member of the Nuclear Burst Simulation Division. Previously, he was on the faculty at the New Mexico Institute of Mining and Technology for three years where he taught geophysics, specializing in ground water supply studies.

Prior to that he was a technical assistant for the United Nations for a brief time, and went to Egypt to teach methods of finding ground water supplies. His stay there was interrupted during the Suez crisis, and he was evacuated by the U.S. Navy and Marine Corps.

Mr. Kintzinger received his PhD in Earth Sciences from NMIMT, his Master's degree in Physics from Yale, and his Bachelor's degree in Physics from Harvard. He was a graduate assistant while at Yale.

He is a member of the Board of Directors of the Middle Rio Grande Taxpayers Association, and a former member of the Socorro Planning Commission. A World War II veteran, Mr. Kintzinger is now a training officer for a Naval Reserve Unit in Dallas.

He belongs to Sigma Xi, scientific honorary society, American Geophysical Union and the Society of Exploration Geophysicists.

New Physics Course To Be Offered at St. Joseph's College

A course entitled "Introduction to Nuclear Physics, Radiation, and the Use of Radioisotopes" will be offered for the first time by the College of St. Joseph during spring semester.

Although conducted with low level radioisotopes, the course will stress the care necessary in the preparation, storing and disposal of samples as though they were of high level.

Fundamental background will be offered during the first eight weeks of the semester when the class meets on Mondays and Wednesdays from 8:10-9:25 p.m. During the second semester, lectures will be presented on the same nights from 8:10-9 p.m. on accelerators, health physics, and radioisotope waste disposal in addition to laboratory periods on Fridays from 6:30 to 9:30 p.m.

College algebra is the only prerequisite, although a basic background in physics and chemistry is desirable. The course carries three semester hours of credit. Further information may be obtained at the college.

Professor From Cornell 'U' to Speak Here

Peter Debye, professor emeritus of Cornell University, will speak on "Critical Opalescence and Molecular Forces" at a dinner meeting of the Albuquerque chapter of the American Chemical Society on Friday, Jan. 27.

The meeting will be held at La Posada Inn in Santa Fe. Dinner will be served at 6:30 p.m. with the meeting slated for 8 p.m.

Reservations must be made by Jan. 25 with Sherman Rabideau, 100 Barranca Road, Los Alamos.

J. W. Reed to Present Paper at U. of California

J. W. Reed (5111) will present a technical paper next week at the annual meeting of the Pacific Southwest Region, American Geophysical Union. The meeting will be held Jan. 26-27 at the University of California, Berkeley.

Title of Mr. Reed's paper is "Air Blast Prediction for Project Plowshare Excavations."

Tech Institute Status Given To Out-of-Hours Curriculum

Technical Institute status, equivalent to any accredited technical institute, has been given by Sandia Laboratory to an educational program started in Albuquerque last September by Technical and Trades Training Division 3132. Sandia Laboratory will recognize any graduates of the Sandia Out-of-Hours Technical Institute as having earned the equivalent of a technical institute degree.

Beginning Feb. 6, full two-year programs in Electronics, Mechanical and Drafting Technologies will be available to interested Sandia employees.

"Rigid standards will be maintained equal to accredited institutions in every way," says Howard Shelton, supervisor of Technical Training and Education Section 3132-1. "This includes providing screening tests, examinations and post testing for evalaution of student progress."

"Normally, participation in a full curriculum will take an employee from four to eight years to complete," Howard says, "depending on the number of courses taken during a semester. All courses will be offered on an out-of-hours basis. Instructors will be qualified Sandia employees who will utilize standard textbooks."

Selected courses will be offered in sequence until all of the courses listed in the curriculum are presented. Courses will be repeated to meet student needs and to allow every interested employee the opportunity to take the entire curriculum.

"Staff assistant and graded employees with the desire to take technical institute training are encouraged to attend these courses," Howard says. "An educational file will be kept on all participants so that a transcript of credits can be made for personal and Corporation use"

Employees who feel that they are knowledgeable in certain courses may take a comprehensive examination covering the concepts and general material of the course. The degree of success achieved in these tests will determine the level of the training at which the enrollee will start in the program.

As in all Sandia out-of-hours courses, no tuition is charged. Textbooks for these courses are provided by the Corporation without charge to students who satisfactorily complete their course.

Additional information and enrollment cards are available from Division 3132, ext 47255 or 25247, Bldg. 813. Enrollment begins Monday, Jan 23.

Following is a complete listing of the curricula for the three Sandia technical institute programs:

DRAFTING AND DESIGN TECHNOLOGY CURRICULUM—FIRST YEAR

First Semester—16 weeks	Class	Lab	Credit
Math I	3	0	3
Engineering Drafting I	0	6	2
Manufacturing Processes I	3	0	3
Electronic Layout	3	0	3
Chemistry & Engineering Materials I	3	3	4
Dimensioning & Tolerance Methods	2	0	2
	14	9	17
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math II	3	0	3
Engineering Drafting II	0	6	2
Manufacturing Processes II	3	0	3
Statics	3	0	3
Physics I	3	3	4
Descriptive Geometry	2	3	3
	14	12	18

SECOND YEAR

First Semester—16 weeks	Class	Lab	Credit
Math III	3	0	3
Engineering Materials	3	3	4
Technical Report Writing	3	0	3
A. C. Fundamentals	4	3	5
Strength of Materials	3	0	3
	16	6	18
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math IV	3	0	3
Dynamics	3	0	3
Thermodynamics	3	0	3
Fluid Mechanics	3	0	3
Kinematics & Machine Design	4	0	4
	16	0	16

Total Credits — 70
Total lecture contact hours — 992
Total laboratory contact hours — 384
TOTAL CONTACT HOURS — 1376

MECHANICAL TECHNOLOGY CURRICULUM FIRST YEAR

First Semester—16 weeks	Class	Lab	Credit
Math I	3	0	3
Engineering Drafting I	0	6	2
Manufacturing Processes I	3	0	3
English Composition	3	0	3
Chemistry I	3	3	4
Descriptive Geometry	2	3	3
	14	12	18
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math II	3	0	3
Manufacturing Processes II	3	0	3
Statics	3	0	3
Physics I	3	3	4
D. C. Fundamentals	4	3	5
	16	6	18

SECOND YEAR

First Semester—16 weeks	Class	Lab	Credit
Math III	3	0	3
Chemistry & Engineering Materials II	3	3	4
English Composition	3	0	3
Tool and Gage Design	3	0	3
Strength of Materials	3	0	3
	15	3	16
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math IV	3	0	3
Dynamics	3	0	3
Design for Production	3	0	3
Technical Writing (Specifications)	3	0	3
Kinematics & Machine Design	4	0	4
	16	0	16

Total Credits — 68
Total Lecture Contact Hours — 944
Total Laboratory Contact Hours— 432
TOTAL CONTACT HOURS — 1376

ELECTRONICS TECHNOLOGY CURRICULUM FIRST YEAR

First Semester—16 weeks	Class	Lab	Credit
Math I	3	0	3
D. C. Fundamentals	4	3	5
English Composition	3	0	3
Engineering Drafting I	0	6	2
Physics I	3	3	4
	13	12	17
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math II	3	0	3
A. C. Fundamentals	4	3	5
Power Source & Rotating Machines	2	3	3
Technical Report Writing	3	0	3
Physics II	3	3	4
	15	9	18

SECOND YEAR

First Semester—16 weeks	Class	Lab	Credit
Math III	3	0	3
Vacuum Tube Principles	2	3	3
Semi-conductors & Transistors	3	3	4
Radio Communications	2	3	3
Instruments & Measurements	3	3	4
	13	12	17
Second Semester—16 weeks	**Class**	**Lab**	**Credit**
Math IV	3	0	3
Electronic Circuit Analysis	3	3	4
Microwave Techniques	3	3	4
Industrial Electronics	2	3	3
Modern Electronic Applications	2	3	3
	13	12	17

Total Credits — 69
Total Lecture Contact Hours — 864
Total Laboratory Contact Hours— 720
TOTAL CONTACT HOURS — 1584

AEC to Remodel Air Conditioning In Building 861

Contract to modify the air conditioning of Bldg. 861 has been awarded by the Atomic Energy Commission to All American Corporation of Albuquerque. The firm's low bid was $74,829.

The project will include furnishing and installing new heating and cooling coils, converters, pumps, dampers, controls, starters and electric wiring, installing government-furnished fan and water chiller, and modifying existing duct work, piping and controls.

Plant Engineering Department project engineer is Hal Baxter (4543-2).

Five Sandians In Symposium on Quality Control

Five Sandians participated recently in the Seventh National Symposium on Reliability and Quality Control. The symposium was held Jan. 9-11 in Philadelphia, Pa.

L. J. Paddison, Director of Product Test Equipment Development 2400, moderated two training sessions during the symposium.

J. G. Magistad (1442) presented a technical paper, "Some Discrete Life Testing Distributions," during the Statistical Techniques session of the program.

A. M. Breipohl (1443) presented "A Unique Allocation of Required Part Reliability," as part of the session on Models and Mathematics.

"The Achievement of Reliability in a Switch Program" was presented by R. O. Murdoch (1432) during the symposium session on Reliability Testing.

During the session on Reliability and Quality Control Education, G. O. Hawley (2561) presented "Training for Reliability and Quality Control."

All four Sandia papers were published in the Symposium Proceedings. Organizations sponsoring the symposium were the American Society for Quality Control, American Institute of Electrical Engineers, Institute of Radio Engineers and the Electronic Industries Association.

Additional Math Course to Be Taught at UNM

Math 241, a course not listed in the regular catalogue, will be offered at the University of New Mexico spring semester.

This course of advanced topics in analysis will be taught by I. I. Kolodner, (a Sandia Corporation consultant) on Tuesdays and Thursdays from 4:30 to 5:45 p.m.

Contents of the course: asympotic series and power series; evaluation of integrals; asympotic expansion of solutions of linear differential equations; equations with large parameter.

Hartley J. Jensen Named Member of Standards Group

Hartley J. Jensen (8122-3) has been appointed to the American Standards Association Exploratory Group on Shock and Vibration Measurements.

He will be one of 11 members on the committee working on various aspects of shock and vibration measurements. His appointment to the committee was based on work he has done at Livermore Laboratory in the field of measurement of large amplitude shock motions.

The task of the committee is to investigate the need for standards on shock and vibration measurement.

Mr. Jensen has been with Sandia Corporation since July 1959 in the Instrument Application Section (8122-3). He is a graduate of Oregon State College where he received his B. S. degree in electrical engineering in 1959. He is a member of Eta Kappa Nu, Sigma Tau, IRE, ISA, and AIEE.

Art Russell's Plans Will Make Him Mighty Busy Retired Sandia Employee

"Plan ahead" is a well-worn phrase, but that's exactly what Art Russell, a draftsman in 4412-5 who will retire in 1962, is doing.

Art has undertaken a project which will use the talents of retired or retiring personnel to instruct young draftsmen. He is teaching basic and advanced drafting and design in an evening class which he recently started.

The course is open to anyone interested who has at least a high school education or to beginning draftsmen who want to increase their skill.

"As enrollment increases, other retiring draftsmen will be added to the staff," Art said. When time and opportunity permit, Art hopes to offer instruction in electrical drafting and architectural and structural drawing, too.

Member of CASA

With "what to do after retirement" in mind, Art became interested in a group called Coordinated Action for Senior Adults (CASA). "One of its purposes is to encourage methods by which talents of older persons may be utilized for benefit of younger ones," Art pointed out.

He also requested pre-retirement counseling which is one of the services offered by Services and Benefits Division 3122.

From these two sources, Art came up with the idea of starting the drafting school. Teaching is not a new field to him. For several years, he has been an instructor for Sandia Corporation drafting trainees, and has done liaison work with Technical and Trades Training Division 3132 on draftsman educational improvement programs. He is also editor of the Sandia Corporation Drafting Manual.

ART RUSSELL
—Teaches young draftsmen—

Michigan U. Graduate

Art has a BA degree and an MA degree from the University of Michigan, where he was a romance language professor for several years. He also studied mathematics and engineering drawing at the University.

His other experience includes 10 years as a machinist and tool and die-maker, and 15 years as a tool and machine designer.

Art holds his classes on Tuesday and Thursday evenings at 7 in the First National Bank Building, Room 8, second floor, in the Hoffmantown Shopping Center. A small fee is charged for the course. If anyone is interested, they may contact Art at ext. 47242.

Sandia Service Awards

15 Year Pins

John McLay, Jr.
1420
Feb. 1, 1946

10 Year Pins

Jan. 21-Feb. 3

Edward M. Bauer 7321, Jack C. Hughes 5111, Richard G. Lopez 4224, Chadwick E. Miller 7122, Marshall W. Tippy 2311, Alma C. Vandevelde 3452, Dean K. Yearout 1422.

Perm N. Dwyer 4251, Joseph Murphy 4221, Henry C. Strauss 4343, Ruth S. Acher 4135, Juvenal M. Baca 7252, Sam G. Baca 3242, William J. Meyer 2622, Henry E. Roy 2641.

Jennie T. Spann 2722, Keith E. Mead 1121, Helen E. Melancon 4171, Robert I. Elledge 2631, Jack L. Miller 4632, John M. Wiesen 1442, Michael D. Adams, Jr. 3242, Robert D. Brammer 4233.

Robert V. Crompton, 3242, Ernest Dell Graves 7321, William D. Huff, Jr. 2751, Dorothy F. Reinertsen 2722, Jacob E. Young, Jr. 4252, Willard E. Flowers 2724, Fred F. Gonzales 2721.

A. C. Harshman 3151, James R. McAchran 2722, Vivian V. Montoya 3242, Lillie B. Padilla 4575, Donald M. Hansen 4511, James B. Hiser 3242, Dale G. Pipher 7521.

Rudolph J. Walter 4315, Harold V. Catt 6021, Bonifacio B. Griego 4212, Joe A. Gurule 4573, Robert Lynes 3451, Guadalupe Mireles 4631, David M. Reid 4514.

AEC Technical Information Giving Sandia Papers Wide Distribution

During the past three months 67 technical papers written by Sandia Corporation employees or by Sandia contract research agencies have been sent to the AEC's Office of Technical Information Extension at Oak Ridge for the Civilian Applications Program. This brings the total for the year to 217, according to a report by Technical Information Division 3421.

In addition, the papers were given standard AEC distribution through the Office of Technical Services, Department of Commerce, Washington 25, D.C. Abstracts of the papers are carried in the Nuclear Science Extracts Journal distributed twice a month by the AEC to libraries throughout the world.

Among the papers not previously reported by the **Lab News** were the following:

"Estimating Safety Probabilities from Fallout Forecasts for Nevada Test Site," "Study of Nevada Test Site Wind Variability," and "Comparison of Fallout Doses from Nevada Tests" by J. W. Reed (5111).

"Radar Return from the Vertical for Ground and Water Surfaces," C. S. Williams (1424) and C. H. Bidwell (1421); "Homogeneity of the Magnetic Field of a Heimholtz Coil," K. D. Granzow (5150); "An Investigation of Long-Term Stability of Zener Voltage References," R. P. Baker (2442).

"Determination of Certification Intervals for Standard Resistors and Precision Potentiometers," L. H. Bressan (2752); "Inertial Power Supplies for Ballistic Missile Re-entry Vehicles," R. J. Martin (1322).

"A Method for Ascertaining the Effect of Large Targets Present in Terrain Return Signals," D. M. Gragg (1421); "Pulse Responses of Terrain Return Program Receivers," F. J. Janza, R. A. Hessemer and C. S. Williams (all 1424); "Crystal Accelerometer Response to Mechanical Shock Impulses," A. F. Lawrence (7113).

"IBM Problem M Curves," C. D. Broyles (5113); "Energy-Absorbing Characteristics of Several Materials," V. Parfitt (7182), "Contact Resistance and the Effects of Materials and Process Variables on Contact Resistance and Contact Reliability in Switching Devices," L. M. Berry, L. K. Jones and D. E. Fjelseth (all 1124).

"Power Requirements for Space Communications," R. J. Thompson (5421); "Enclosure and Sealing Methods," G. S. Wallace (2563); "A System for Automated Presentation of a Vigilance Task and Recording of Subject Performance," H. E. Anderson (1442); "A Transistorized Reactivity Measurement System," L. Ehrman (1414).

"An Aid to Printed Circuit Layouts Using the IBM 704 Computer," S. C. Stearns (Sandia Consultant) and R. A. O'Connell (2422); "Instrumentation Application of Carrier-Erase Magnetic-Tape Recording," R. S. Reynolds (7232).

Gen. Betts Takes Over Directorship Of AEC's DMA

Brig. Gen. A. W. (Cy) Betts assumed directorship of the AEC's Division of Military Application on Jan. 15, succeeding Maj. Gen. A. D. Starbird, who has held the position since 1955.

General Betts was associate director of Los Alamos Scientific Laboratory from 1946-48 and in recent years has been director of the Advanced Research Project Agency of the Department of Defense.

The Division of Military Application is responsible for supervision of weapon activities at AEC laboratories.

Congratulations

Born to:

Mr. and Mrs. Elliot Harris (3462-1) a daughter, Lisa Rachelle, on Dec. 29.

Mr. and Mrs. C. F. Wilson, Jr. (7244) a son, David Frederick, on Dec. 30.

Mr. and Mrs. C. W. Frasier (7183-3) a son, Fred Robert, on Jan. 9

Mr. and Mrs. E. J. Simpson (8114-1) a daughter, Kathleen Diane, on Dec. 29.

Mr. and Mrs. W. D. Zechmeister (8114-1) a son, Mark Allen, on Dec. 10.

Mr. and Mrs. Paul Dominguez (8213-2) a daughter, Laurie Lynn, on Dec. 15.

Mr. and Mrs. Felix C. Almaraz (7513-3) a son, Gregory Joseph, on Dec. 30.

Mr. and Mrs. Ben Cordova (4573) a son on Dec. 29.

Sandia Lab Speakers On Career Day Program At Highland High School

Sandia Laboratory supplied ten speakers for a Highland High School Career Day last Friday. The scheduling of the speakers was coordinated with Highland High by Sandia's Speakers Bureau, of the Public Relations Division (3431).

Two of the Sandians, T. S. Church (1410) and N. A. Pollard (1411-3), spoke on the specific area of electronics, but the other eight spoke generally about the types of jobs at Sandia. These eight were K. E. Sutton (3151-1), R. N. Reed (3151-1), A. J. Fuller (3151-1), V. O. Henning (3151-2), W. A. Gardner (3151-2), M. A. McCutchan (3132), J. L. Wheeler (3121-1) and J. Danclovic (3426).

The men spoke to ten groups, of from 25 to 40 students, about the type of work done in various fields and what academic preparation was necessary to enter these fields. The talks were presented during the homeroom period at Highland, 9:10-10:10 a.m.

Ping Pong Tourney Set for February

The second annual Sandia Corporation Ping Pong tournament for ladies will be held in Bldg. 892 in February. Trophies will be awarded to the winner and runner-up.

All ladies in the Corporation are invited to enter. For further information contact Employees Services (3122), ext. 29157.

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CLASSIFIED ADVERTISING

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

RULES

1. **Limit: 20 words**
2. **One ad per issue per person**
3. **Must be submitted in writing**
4. **Use home telephone numbers**
5. **For Sandia Corporation and AEC employees only**
6. **No commercial ads, please**
7. **Include name and organization.**

FOR SALE

IMMEDIATE POSSESSION at FHA appraisal. Low down, 3 bdr. and den, 1¾ baths, hardwood floors, garage, sprinklers, large corner lot near bases. Null, AX 8-0586.

BICYCLES: boy's 26", girl's 24"; fireplace screen; new electric hand mixer; trailer hitch. Nelson, AL 6-6300.

GAS RANGE, 3 year old Kenmore, glass oven door, electric clock and timer, $50. Paris, 2718 June St. NE, AX 8-2939.

'56 VOLKSWAGEN, deluxe interior, whitewalls; 1959 Metropolitan, 9200 miles. Trumble, AM 8-7477.

SPORT COAT, 100% camel's hair, size 36½, $25; 9 cup fully automatic coffee maker, $8. Schultz, AX 8-2731.

GUITAR, beautiful tone, $50; antique rocker, maple, contour seat, $60 shotgun, 12-ga. automatic, $65; western saddle, $50. Galbreath, 3730 Manchester NW, DI 4-4306.

'58 MERCURY Montclair, 4-dr. sedan, R&H, WW, PS and PB, $1575. Magee, 6005 Alta Monte NE, AL 6-1358.

MUST SELL 2 good gelding horses, one bay and one palomino. Also, two horse trailers. Causey, AX 9-0089.

'50 CHEVROLET, 2-dr., Powerglide, $200 or best offer. Bowen, 701 Kentucky SE, AL 5-6759.

REVOLVER, .38 Special combat masterpiece, extra grips, trigger shoe, holster, shells, $51.50. Parks, AM 8-0875.

REFRIGERATOR, 6 ft. Westinghouse, $50; linen closet, $14. Silva, CH 2-4934 after 5:30 p.m.

ROBERSON 3 bdr., 2-car garage, 1¾ bath, dishwasher, disposal, air conditioned, landscaped, children's pool, playhouse, many built-ins, $19,900. Sedgwick, 3421 Parsifal NE, AX 9-9071.

MAHOGANY DESK and chair, $35; 6 pr. white dacron panel curtains, new, $10. Cosgrove, AL 5-8545.

VACATION TRAILER, Mercury, 15 ft., ice box, stove w/oven, sleeps five, less than 4500 miles. Neel, 3617 Espejo NE, AX 9-9309.

BICYCLE, full size, Schwinn, $20. Rechner, DI 4-9776.

PORTABLE TV, $50; 19 inch Westinghouse console, $45. Wiesch, AL 6-7236.

'59 FORD, 2-dr., 6-cyl., standard transmission, overdrive, R&H, padded dash, immaculate, $1,150. Welker, 8510 Flower Place NE, AX 9-1179.

HALF GERMAN shepherd pups, $5 and $3. Pritchard, DI 4-3944 or DI 4-3984.

'58 VESPA motorscooter. Wright, AL 6-9783 after 4 p.m. or all day Saturday.

'56 CHEVROLET Bel Air, 4-dr. sedan, new white sidewalls, Power-Pac, Power-Glide. Buchanan, 8920 Northeastern NE, Apt. L, AX 9-7306.

HOUSE TRAILER, Hanson 27 ft., $1250. Dale, Space A2, 9000 Zuni SE, AX 9-4542.

'50 PLYMOUTH 4-dr. sedan, fair transportation, $150. McAlexander, AX 9-2864.

TAPE RECORDER, Stereo VM model 714, w/ additional companion amplifier-speaker; 2 baby cribs w/mattresses; Strolee twin baby stroller. Graeber, AX 8-0662.

'52 one ton 4-speed Dodge pickup, radio, heater, canopy. Will trade. O'Neal, 3606 Colorado Ct. NE, AX 9-9134.

BOOKCASE, 4 shelves 8" deep, 4 ft. wide x 4 ft. high, light finish; coffee table, 44" x 20", limed oak. Fox, AL 6-2606.

TRAILER, 21', sleeps 5, gas-electric complete kitchen, bath, 10-ply nylon tires, hydraulic brakes, extras. Long, AL 6-0262 after 5 p.m.

CRIB, natural finish, drop side, mattress needs recovering, $10. Lynes, AX 9-5028.

'49 FORD club couple, R&H, OD, $160. Dietzgen slide rule, $12.50. Netz, AX 9-7036.

TONNEAU COVER, vinyl material, for 1955-57 T-bird, $15. Romero, DI 4-0302.

HIGH CHAIR w/pad, folds into play table, $10; Barker & Williamson 5100B transmitter, new, $375. Will finance. Bortniak, AL 6-3177.

REFRIGERATOR, 8 years old, Montgomery Ward, $75. Perea, 5516 Granite Ave. NE, AL 5-6902.

'56 CHEVROLET 4-dr. hardtop, $900. Bow, Kodiak Special, glove, armband, 1 doz. aluminum arrows, $100 value for $45. Cordova, AX 9-3460.

STERLING SILVER flatware, Westmorland's "John and Priscilla," five 6-piece place settings, $125. Janney, AM 8-8074.

VACUUM SWEEPER, Singer upright, $25; Filter Queen vacuum cleaner, $35. Porter, 7421 Winter NE, AL 5-8495.

WRINGER WASHER with pump, Norge, double deluxe tubs, $35. Brace, AX 9-6755.

HEATHKIT PREAMPLIFIER, works fine, $15, with book. Shaum, AX 9-5333.

3 BDR. HOUSE, Roberson resale, 1¾ baths, lawns, patio, walled, carpeted, $800 down, total $14,700. Peterson, 1904 Moon NE, AX 9-6473 weekends and evenings.

'59 ALL STATE motorcycle, 1100 miles, $150. Calvery, AM 5-0351.

'54 INTERNATIONAL Travelall, R&H, 4 new tires, $600. Hackard, AX 8-1369.

'46 CHEVROLET coupe, runs good, $75; play pen, new, cheap. Cericola, AX 8-2426.

ENCYCLOPEDIA AMERICANA, 1958 with annuals, ideal for high school or college students, $150 includes Popular Science volumes if desired. Womelsduff, AX 9-6269.

CHILDREN'S FURNITURE: bookcase headboards w/steel bed frames, $10 each; chest of drawers, $10; record cabinet, $5. Birdsall, AL 6-6225.

RELOADING DIES and case holder for 6.5 x 55 mm, used on only 100 cartridges, $8. Taylor, AL 6-3774.

WEDDING RING, wide, white gold, containing 15 diamonds, size 6, will sell for appraised value of diamonds. Preston, 2921 Nevada NE, AX 9-1948.

'57 VOLKSWAGEN sedan, radio, leatherette, wholesale plus 15%. Sabisch, DI 4-6185.

ALTERNATOR SET up, complete 12 volt Leece Neville, cost new $255.75, will sell for only $75. Gatlin, AM 8-8151.

'60 CORVAIR deluxe, red, loaded with extras, 26 mpg, only $1785. Shaver, 119½ Harvard SE, CH 2-2583.

ROLL-AWAY BED, twin size, with zippered cover, one year old, used three times. Durrie, AX 8-0209.

BUNK BEDS with springs, ladder and top rail, $15. Haskins, AX 8-1997.

'58 MGA, radio and heater, make an offer. Sayers, AX 9-1833 after 5 p.m.

NEXT

DEADLINE

FOR SHOPPING CENTER ADS

Friday Noon, Jan. 27

HALLICRAFTERS Model S-38C communications receiver, $20. Taylor, AX 9-2281.

LIVING ROOM suite, two piece, $25. Wilson, AL 6-4101.

'55 BUICK Century station wagon, Dynaflow, power brakes, power steering, air lifts. Smith, AX 9-0574.

'56 CHEVROLET V-8 Bel Air, 4-dr, R&H, power steering, powerglide, tinted glass, $800. Bennett, AX 9-7400.

'53 BUICK 4-dr. Special, $250; 1950 Plymouth 4-dr., $75; blond table model Silvertone radio-phongraph, $20. Gilpin, AX 9-1100.

COFFEE TABLE, French provincial, $15; wrought iron trundle beds with mattresses, $59; watermelon color slipper chairs, $59/pair. Hook, AM 8-0291.

HEATERS, LP gas, 1 large and 2 small, for house or trailer. Ogden, CH 3-4723.

YOUTH BED, birch with "Kant Wet" mattress, $40. Di Luzio, AM 8-5240.

WEAVING LOOM, 6 treadle LeClerc, 52" overall width, 46" fabric width, $95. McCulloch, AX 9-5463.

FISH TANK, pump, filters, plants, light, thermometer, thermostat controlled heater, fancy guppies, sell part or all; reflex camera w/flash. Villella, AX 9-7915.

26" SCHWINN boy's bicycle, needs fenders, $10. Campbell, AX 9-4830.

MASSAGE TABLE, heated, $20; portable steam bath, best offer. Kostka, AM 8-8793.

PROVINCIAL SOFA, two sturdy sectionals; several tables and lamps; electric range. Cheap, must sell at once. Frankel, AL 5-7119.

CRIB and playpen. Showalter, AX 9-8008.

'60 THUNDERBIRD, less than 6000 miles, light blue-green. Womack, AL 6-0642.

DRAPERY MATERIAL, 21 yards, modern print, aqua, gray, black on white, cost $2.50/yd., sell for $1/yd. Fergesen, 9017 Menaul NE, AX 9-9139.

36" GAS range, $30. Kull, 3524 Ross Ave. SE, AM 8-3171.

KENMORE WASHER, $35. Weldon, AL 5-5855.

3 BDR. HOUSE, 1¾ baths, brick fireplace, wool rugs, drapes, double garage, extras, $2000 down, $18,500. Brown, DI 4-6831.

'53 OLDSMOBILE 88, 4-dr., R&H, PB, WW, one owner, $300; 1952 Studebaker Champion, 2-dr., heater, $250. Kelley, AL 6-4982.

'60 RAMBLER, 4-dr., deluxe, 7500 miles, $1680. Magruder, AL 5-2078.

SMALL CAMPER for pickup. Shelton, AX 9-7719 after 5 p.m.

'47 JEEP station wagon, 2-wheel drive, $190. Hart, AX 9-8832.

'37 CHEVROLET 4-dr. sedan, good transportation, $85; baby crib w/mattrtess, $15; rollaway bed, $10; compressor w/ motor and new paint gun, $25. Vinovich, AX 9-1979.

10" TRICYCLE, $5; platform rocker, $10; maple crib, $5. Daphinee, AL 5-6367.

BABY BED and mattress, reasonable or will trade for phonograph. Brown, AX 8-1728.

HOLLYWOOD BED, double, springs, mattress, headboard, $25; couch, brown, makes into bed, $20; wheelbarrow, $10; lawnmower, $7; ironing board, $4. Pruitt, AX 9-7723.

TWIN BED with springs and mattress, $15. Massey, AX 8-1468.

ENCYCLOPEDIA AMERICANA, 35 vol. including annuals, w/bookcase, $125. Radman, ext. 31236.

CAMERA, LEICA 3F, syncronized for bulbs or strobe, case, some accessories, $100 cash. Burrell, AX 9-6054.

STEREO, new, GE table model, 4-speed, 2 separate speakers, $55. Ward, AX 9-7176.

'51 FORD club coupe, good body, runs good, $75. Lerma, AL 6-7402 after 6 p.m.

'53 PLYMOUTH, 2-dr., dependable second car. Long, AX 9-1416.

4 BDR. or 3 bdr. 1¾ baths, attached garage, carpeting, air conditioning, good school area, selling for $12,500 FHA appraisal, $400 down. Brinkley, AL 5-2783 after 5:30 p.m.

TIRE CHAINS, reinforced, 7:10x15, $3; 8:50x14, very little wear, $7.50. Auerbach, CH 2-6478 evenings.

17" TV w/FM connector, $35; Stromberg-Carlson radio and RCA phonograph, $35; Eureka cannister vacuum cleaner w/ attachments, $22. Quinlan, AM 8-5665.

RUG, blue flowered, with pad, 9'x12', best offer. Kelly, 10121 Betts NE.

2 BDR. HOUSE, 9005 Cordova NE, walled, landscaped, $1550 down, assume payments; 1955 Ford convertible, R&H, Fordomatic, new tires, $600. Farmer, AX 9-6007 after 5 p.m.

'60 CAMPER, aluminum, for pickup, plywood interior, insulated, vinyl floor, curtains, 6,-12,-110 volt lights, 8' long, 6'6" wide, 60" high, $375. Allen, 317 Mesilla NE, AL 6-4335.

'51 NASH Statesman, nearly new tires, battery, and voltage regulator, seats make into bed, $245. Thompson, AX 9-2273 after 5 p.m.

RCA HI-FI table model, 4-speed changer, with 45 rpm spindle, $50. Willingham, AX 8-1415.

PICK UP, 1960 Ford V-8, 4-speed, custom cab, heavy duty springs, large radiator and heater, 6 ply mud/snow tires, 13,000 miles, $1695. Schuetz, BU 2-3486.

'57 MERCURY Voyager station wagon, all factory power assists, air conditioned, white and red, extras, $100 under book, consider trade. Chandler, AX 8-1705.

SUNBEAM MIXMASTER Junior, $10; 4 ballerina length net formals, size 9, best offer. Jolley, 3002 Sierra Dr. NE, DI 4-0724.

MAGNAVOX CONSOLE 17" TV w/12" speaker, $60; RCA Estate electric stove, 4-burners, 2 ovens, grill, deep well, all controls, $100. Leslie, AX 8-2176.

WANTED

HOME FOR five month old dog, mixed breed, friendly, likes small children. Schonberg, AX 9-9437.

METRONOME, Seth Thomas. Pollard, AM 8-1709.

LADY to care for two small children, do light housework on Tuesday and Thursday each week beginning in February. Rose, 4209 Mescalero, DI 4-8592.

PICK-UP TRUCK, late model, 4-speed, 8 ft. bed; also need camper for pick-up. Baxter, DI 4-7601.

RIDE from vicinity of Morris, Snow Heights, and Baldwin NE to Gate 8 or 6. Chadwick, AX 8-1298.

HOME TO rent, 3 bdr. and den, unfurnished, in A-1 zoning district or outside city limits. Harley, TR 7-2082.

RIDE from 4312 Goodrich NE to vicinity of Bldg. 894. Shieler, DI 4-8617.

MEMBER FOR car pool, vicinity of Constitution and Girard to Gate 7 or 8. Marmon, AL 5-4515.

MODERNFOLD DOORS, two, for standard size doorway. Ogden, CH 3-4723.

TYPING WORK for evenings. Wickam, AL 5-4410.

RIDER from West mesa to Tech area I. Waldorf, CH 2-8303.

ENCYCLOPEDIA, used set. Martinez, AX 8-1665 after 5:30 p.m.

CHILD, age 2-5, to care for in my home week days. Close to Eubank and Menaul. Rigsdale, AX 9-6186.

HOME FOR kittens, 1 male, 1 female, 1 grown female, all long hair, light gray. Reinertsen, AL 5-1954.

RIDE FROM 1416 Kentucky NE (between Constitution and Lomas, 1 block west of Louisiana) to Gate 7 or 8. Bortniak, AL 6-3177.

FOR RENT

2 BDR. APT. in brick triplex w/stove & refrigerator, storage space, water and garbage paid, 528 Cardenas SE, Tillman, AL 5-6292 after 6 p.m.

NEW, FURNISHED 2 bdr. apt., $58, water and garbage paid. Glory, CH 7-3145.

2 BDR. HOME, unfurnished, attached garage, water paid, Love Ave. in Princess Jeanne Park. Skender, CH 7-4555.

2 HOMES, 2 bedrooms, fireplace, near schools and shopping, water paid, $70 a month. Cummings, AL 6-6582.

2 BDR., hardwood floors, 2 blocks to shopping and schools, $85, immediate occupancy. Thompson, 8206 Robin Ave., AX 9-3416.

BEDROOM, private bath, suitable for one or two. Will consider giving two meals a day if desired, clase to bases. Abergo, 234 Parsifal NE, AX 9-0444.

2 BDR. HOME, 708 Arizona SE, w/w carpeting, central heat, garage, walled yard, screened patio, water and garbage paid. Tillman, AL 5-6292 after 6 p.m.

LOST AND FOUND

LOST—Man's tan leather gloves, 5-year SC pin without clasp, brown leather gloves, pencil engraved Ann Nokes, ladies grey Ray Ban sunglasses, membership pin w/BL on bottom, silver and turquoise cuff link, 5 keys on ring with short chain, man's waterproof steel watch, 1/8 of a 2-piece ski rack, grey leather glove. LOST AND FOUND, Ext. 26149.

FOUND—Black Studio Girl eyebrow pencil, Ford key w/black and white snap case, ladies' cream color gloves, small key marked 'Master,' white doe skin glove, gold earring w/pearl; 3-strand pearl bracelet, key w/Hawaiian Island disc, pearl clip earring, white leather glove, Benny's Benrus watch, pearl earring, gold clip earring, ladies' blue Cool-Ray sunglasses, ladies' tan glove, 5 year SC pin, Parker ballpoint pen. LOST AND FOUND, Ext. 26149.

FOR SALE AT LIVERMORE

3 BDR. HOUSE, 2 baths, stove, refrigerator, disposal, carpeting, draperies, insulation, double garage, landscaped, fenced yard, 5¼% G.I. loan. Crafts, HI 7-3147.

'58 CHEVROLET, 4-dr., station wagon, 6 cyl., overdrive, push button radio, heater, low mileage, original owner, $1475. Saselli, HI 7-1729.

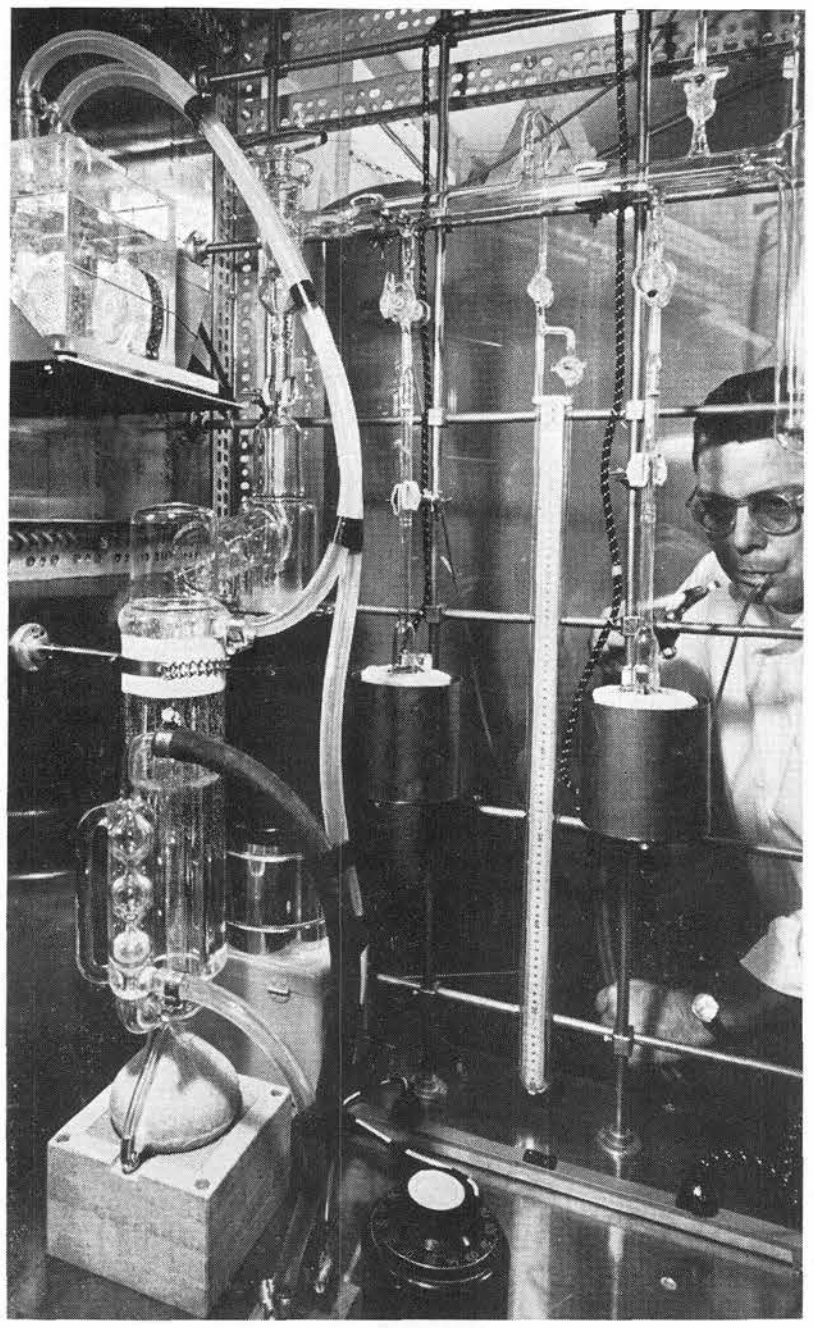
GE ELECTRIC Range, automatic oven, meat thermometer, grill, calrod unit. Franklin, Ext. 2265.

WEDGEWOOD RANGE, deluxe, $125; breakfast set, $35; desk, 30"x42", and chair, $30. Hammer, HI 7-4311 after 5 p.m.

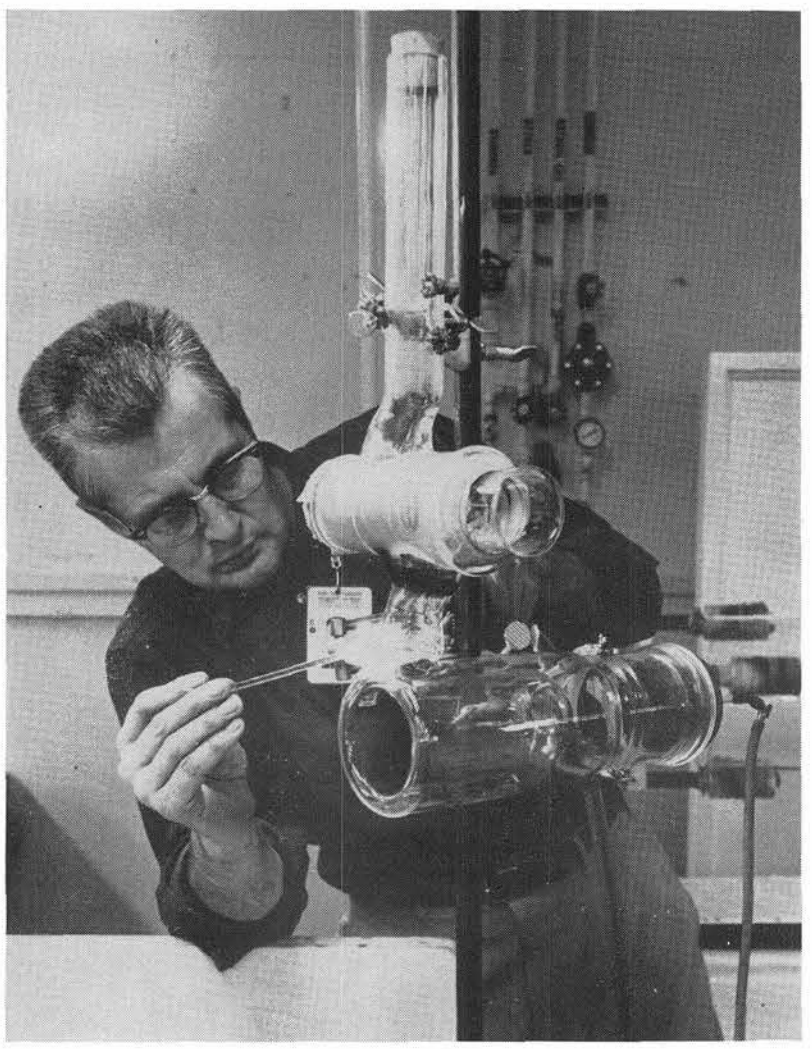
WANTED AT LIVERMORE

PLAYER PIANO, any condition; tilting arbor saw, 8" or 10", drill press, hand sander, jointer, other wood working tools. Saselli, HI 7-1729.

Sandia Lab's Glassblowers Are Creating New Tools of Science



FINAL ASSEMBLY of an intricate glass vacuum system fabricated by Sandia's Glass Shop 4224-5 is made by Warren Roberts in the laboratory area of Division 1411 in Bldg. 817.



CLINT TUTHILL is joining a glass tube to a 16-in. belljar using a gas-oxygen torch. Glass is heated to the proper temperature with the torch and then brought together whereupon it fuses.

In a number of research and chemical labs at Sandia Laboratory are some fascinating pieces of glass apparatus. Chances are that if it is a special "one of a kind" glass system to perform a special job, it was fabricated recently in Sandia's Scientific Glass Section 4224-5.

Located in Bldg. 839, the section's five glassblowers produce an impressive array of custom pieces for Sandia's research and development organizations. Included is anything from intricate vacuum systems to tiny precision glass wafers bonded to a wide range of metals and materials.

"About 90 per cent of our work is fabricating laboratory apparatus," Ron Snidow, 4224-5 supervisor, says. "Usually the project engineer has in mind an idea or requirement for a special piece of equipment. After discussing it at length, we create the configuration needed. Or we work from detailed drawings—either way, we're here to get the job done."

Much Combined Experience

With 60 years combined experience in glass blowing, the men of the Glass Shop are uniquely qualified in one of man's ancient arts. Although modern tools are utilized in scientific glass work, ultimately the finished job depends on the skill and craftsmanship of the glassblower.

Bert DuMars and Clint Tuthill are two glassblowers who started in their early teens at Corning Glass Works in Corning, N. Y. Charlie DeMoss served an apprenticeship in the neon sign industry and worked in the business 12 years prior to coming to Sandia. Warren Robertson started at a General Electric plant in Hanford, Wash., and spent 15 years in scientific glass fabrication. He was working at the National Reactor Test Station near Idaho Falls prior to coming to Sandia.

Ron Snidow began his glass blowing career with a petroleum company in Oklahoma where he spent eight years before coming to Sandia in February 1959.

In Development Shops

The Scientific Glass Section is in Sandia's Development Shops organization. As part of the Specialties Department 4220, the Glass Shop provides support glass services for any job that might be in the shops as well as performing as the "lead" shop for its own jobs and calling for support services from other shop organizations.

"A great deal of our work," Ron says, "has to do with glass seal geometry. Sandia has many requirements calling for bonding glass to other materials while maintaining rigid specifications. We utilize the characteristics of many types of glasses in this work to come up with the kinds that will work."

The Glass Shop stocks many types of glass in different configurations. Selection of glass to be used is carefully done to match the requirements and use planned for the piece. In some instances, special stock has to be ordered to meet Sandia requirements.

The stock is heated with a variety of torches to a "workable" state. The glassblower's skill can produce from this semi-molten mass almost unlimited varieties of shapes.

Included in the Glass Shop's service is mobility. After fabricating a glass system in Bldg. 839, the section frequently installs it in the laboratory requested, with special fittings and assembly being done on the spot.

Ancient Art

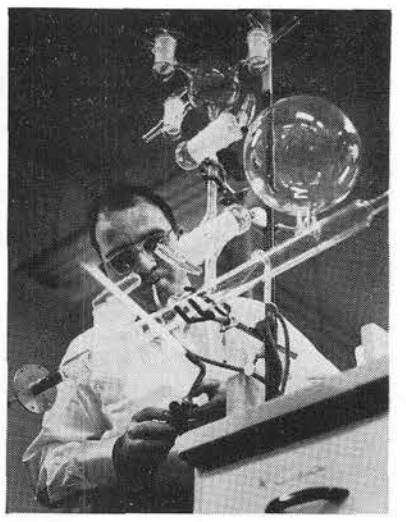
From these modern applications, the history of glass goes back to 2000 B.C. in Egypt. Chinese artisans were producing decorated glass utensils as early as 550 B. C. The Phoenicians began working glass early in the first century. Their skill was passed on to the artisans of Venice and spread throughout Europe.

Optical glass was produced by the Germans in the 16th Century. Glass has been an important tool of science ever since.

Future plans of Sandia's Scientific Glass Shop call for expansion of the shop to house new equipment and more working space. Additional space for the shop has been allotted in Bldg. 839 and the new equipment ordered.

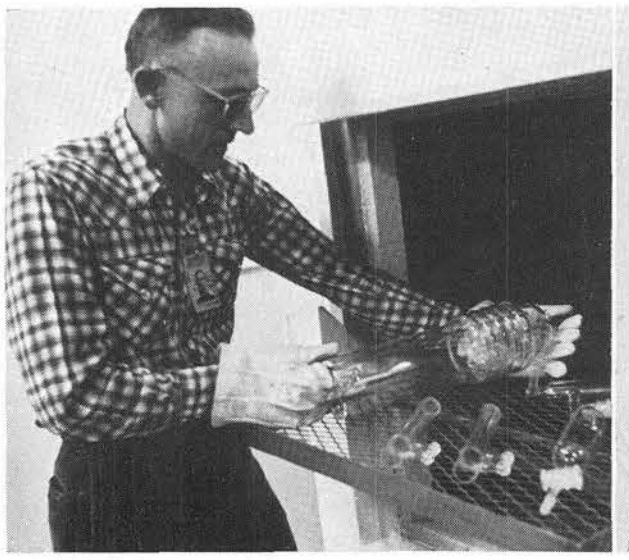
"In about four months, we expect to have one of the most complete scientific glass working facilities in the southwest," Ron says, "which will contribute to an improved service to research and development effort at Sandia."

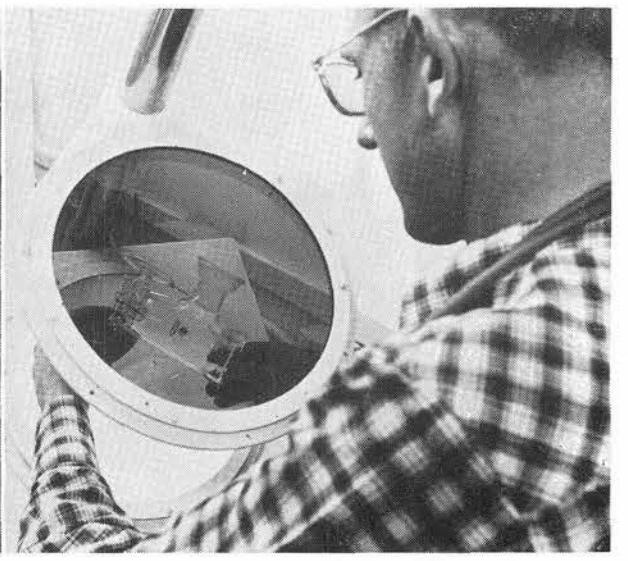
GLASS GRINDING OPERATION, using a flat cast iron grinding wheel with carborundum grit and water as the grinding medium, is performed in this photo by Bert DuMars.



RON SNIDOW, Glass Shop supervisor, applies final touches to a glass vacuum manifold fabricated for Division 4411. Typical of the laboratory apparatus created by the Glass Shop, this piece demonstrates the skill of the glassblower.

CAREFUL APPLICATION of the glassblower's art is required as Bert DuMars joins two glass pieces. The glass apparatus is a liquid nitrogen pump which will be mounted to an oil diffusion system.





ANNEALING OVEN is used for relieving internal strain in finished glass pieces. High temperature brings the glassware to an even temperature above its strain point and thus removes local strain areas in the glass. Operator Charlie DeMoss, in picture at right, examines glass apparatus under a polariascope which reveals internal stresses or strains remaining after work on the glass is completed.

Sandia's Safety Record

Sandia Laboratory	Livermore Laboratory
HAS WORKED	HAS WORKED
1,110,000 MAN HOURS	4,305,000 MAN HOURS
OR 32 DAYS	OR 1797 DAYS
WITHOUT A	WITHOUT A
DISABLING INJURY	DISABLING INJURY