



Mr. Easley

James W. Easley Named Director of Radiation Physics

James W. Easley was appointed Director of Radiation Physics Organization 5300, effective Jan. 15. Organizations reporting to this newly-formed directorate will be announced later.

Mr. Easley has been with the Bell Telephone Laboratories since 1954, working initially in semiconductor device characterization. Later he was concerned with bombardment or irradiation damage in semi-conductors and to semi-conductor devices.

During the summer of 1959 Mr. Easley was on loan to Sandia Corporation and was assigned to Physical Sciences Research Department 5150.

In June 1960 he returned to Sandia as manager of Radiation Effects Department 5430.

Mr. Easley received both PhD degree and Bachelor's degree in physics from the University of California. Before joining Bell Telephone Laboratories he worked for several years at the University's Radiation Laboratory at Berkeley in the field of high energy neutron scattering.



CHECKING FIGURES on fallout shelters recently designated in eight Sandia Laboratory buildings are (l to r) Harry Pastorius (4540), Kenneth Kraker (AEC/LASL), Ben Williams (LASL), and Frank Norris (4541-1). Certification of the figures by the two Los Alamos men means that the government will furnish provisions for the shelters since they conform to established regulations.

Registration Dates Near for Sandians

Registration for the spring semester will be Jan. 26 for the College of St. Joseph and Feb. 12 and 13 for the University of New Mexico.

Sandia Laboratory employees requesting assistance under the Educational Aids Program should turn in their applications to University Education and Liaison Section 3131-2 at least one week prior to registration at each school. The applications (SC 4555-A Comb 10-61) are available from General Stores.

Three hundred and sixty two participants will soon complete the fall semester under EAP at the University of New Mexico, St. Joseph College, and other colleges throughout the country. During this semester a total of 184 undergraduates, 28 graduate non-degree, 127 master's and 38 doctoral candidates enrolled under the program in a variety of courses. In addition, 12 Corporation employees assist the University in part-time teaching.

There are also 128 Technical Development Program enrollees attending the University of New Mexico. In June, 68 of these will complete the program, including four participants selected from on-roll employees. Sixty new participants entered the program in the fall of 1961 and are scheduled to complete the program in 1963. All are in the fields of Mechanical and Electrical Engineering.

Credit Union Directors Call Annual Meeting

The Board of Directors of the Sandia Laboratory Federal Credit Union has scheduled the annual meeting of Credit Union members for Wednesday, Jan. 24, at 7:30 p.m. in the ballroom of the Coronado Club.

Reports of the past year's operation will be presented and new officers will be elected, according to R. W. Whitson (7521), president of the Board.

"This will be an opportunity for all members to participate in the operation of their Credit Union," Mr. Whitson said, urging attendance at the meeting. "We will welcome discussion and new ideas for the membership."

Following the meeting, a buffet snack will be served.

ASQC To Offer Reliability Course At U of New Mexico

The American Society for Quality Control will sponsor a Reliability Technology course at the University of New Mexico Community College during the second semester.

Included in the non-credit course will be an introduction to the theory of analytical and predictive techniques applicable to the design, development, and production of a reliable product.

The classes will be taught by W. M. Sundt, supervisor of Reliability Development Section 1443-1. Mr. Sundt has a BS degree from the University of California at Berkeley and is a registered professional engineer in New Mexico. He is a member of ASQC and the American Institute of Electrical Engineers.

Further information may be obtained from Duard K. Nowlin, AEC-Sandia Area Office, ext. 40230, who is educational chairman of the Albuquerque Chapter of ASQC. The evening class will regularly meet will be determined by those registering for the course.

Between You and Your Congressman

Great Need for More Letters with Logic

According to one source, the inside of a congressman's mailbox looks something like this: 25 per cent is "inspired" or lobby mail pressing the cause of some interest group; another 25 per cent consists of fan mail, letters from people addicted to writing, and letters from "cranks." The remaining 50 per cent consists of appeals for assistance plus a mere scattering of letters from citizens expressing their personal views on public issues. If this breakdown is accurate, then some congressmen have a legitimate gripe: To do their jobs effectively they need the views of their constituents; and yet half of their budgets and staff are tied up processing mail which is scarcely indicative of their constituents' true sentiments on public issues.

But even more important, however, the character and quality of mail flowing into congressional offices is one of many indications that citizens need to communicate more effectively with their congressmen. This need is urgent. The impression this mail makes may well determine the actions Congressmen will take on forthcoming bills relating to international affairs and national defense, pending issues like tax reform, compulsory health insurance under social security, federal aid to education—and in the big battle that appears to be shaping up over the country's international trade policies.

When You Write Your Congressman

With 1962 congressional campaigns only a few months off, congressmen are becoming even more sensitive to public opinion and hence to letters and telegrams from their constituents. This does

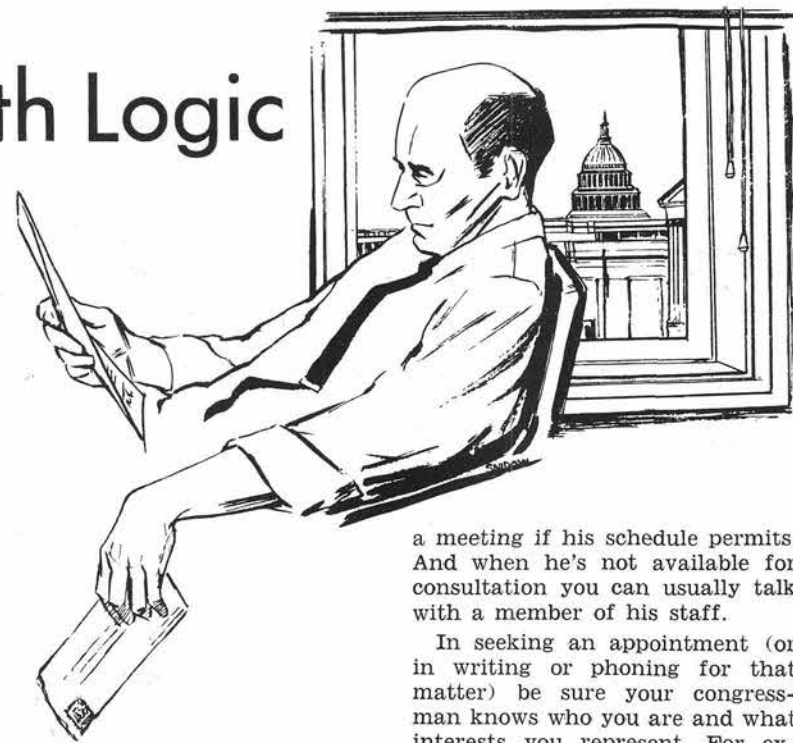
not mean that they'll allow themselves to be influenced solely by public opinion; for to do so, in the words of Stephen Young of Ohio, would be to become "a commonplace exponent of popular sentiments." It does mean, however, that when citizens really have something to say on important issues, they can and should write their congressmen with the assurance that their views will be well received.

Former Representative James Quigley of Pennsylvania says: "Letters that have something to say and say it well are always welcome and it's not possible to hear too often from such a correspondent. Unfortunately, this kind of a letter-writer is in the minority." The problem with many people who write to congressmen, according to Mr. Quigley, is that they "tend to be more opinionated than they are informed." But, he says: "When it comes to influencing me, the soundness of their logic rather than the heights of their emotion or the depths of their conviction is much more likely to carry the day."

A good way to avoid the pitfalls cited by Representative Quigley is to understand your congressman's frame of reference. If you're writing on a particular piece of legislation, do some homework. Know his thoughts and feelings on this piece of legislation well enough to be able to summarize them. Request other congressmen to send whatever written reports they may have on the legislation. Such information may provide further insight into your congressman's position and at the same time enable you to strengthen the arguments for yours.

If your congressman has a strongly held position, any attempt to persuade him to change it "is largely a fruitless exercise," according to Senator Joseph S. Clark of Pennsylvania, "unless you can present compelling new arguments." You should also check your congressman's present and past voting record and what he has had to say on the proposed legislation. Then revise your comments, eliminating emotion. This way any differences that may exist are reduced and those that remain are rational and understandable. Then when you have thought about what you might say in your letter, follow these simple rules:

1. Be timely. Letters written too soon are as ineffective as those written too late.
2. Refer to bills by their numbers or popular names.
3. State your reasons for being interested. Letters which gripe, whine, demand, or threaten get nowhere. Write and thank your congressman when his actions reflect views you've expressed.
4. Brevity is good, but clarity is important too. So choose your words carefully.
5. If you are writing as an individual citizen make sure that your congressman understands this. In such instances do not use an organization letterhead or return address. When participating in a group writing effort, keep in mind that 50 signatures on one letter are much more effective than 50 copies of the same letter.
6. Your vote counts as much as the next man's. If you have something to say, your congressman will be as interested in your



views as he is in those of your neighbors. In writing to him, keep this point confidently in mind.

Your letter may receive personal attention from your congressman, especially if it is well written. Otherwise, it will certainly receive attention from members of his staff who, in addition to answering those letters your congressman is unable to attend to personally, keep him informed on the extent of constituent interest in current issues. Furthermore, whether or not your letter achieves its immediate objective, it will indicate to your congressman that your concern with his performance extends beyond election time.

A Call Or Visit To Your Congressman?

There may be some rare occasion where you feel the nature or timing of an issue requires direct discussion between you and your congressman. In such instances he'll be glad to arrange

a meeting if his schedule permits. And when he's not available for consultation you can usually talk with a member of his staff.

In seeking an appointment (or in writing or phoning for that matter) be sure your congressman knows who you are and what interests you represent. For example, where your congressman can identify you as someone able to contribute additional information or as one who is apt to express views or opinions held by a large segment of the community, he may be all the more eager to talk with you. Thus, it may be helpful in some instances to identify yourself as a member or representative of a civic, professional, or business group in your community. If you don't belong to such a group, but feel that broad support is needed to win your congressman's cooperation, try to stimulate interest among your friends and neighbors through the formation of an action committee.

Your meeting with your congressman will probably be brief. Preparation for the meeting may therefore be more important than the meeting itself. This means assembling beforehand the facts needed for your presentation and

(Continued on page 3)

Editorial Comment

Money Value of an Education

It should be reassuring to your son or daughter of high school age to know that there are excellent job opportunities in the future if they have the needed skills.

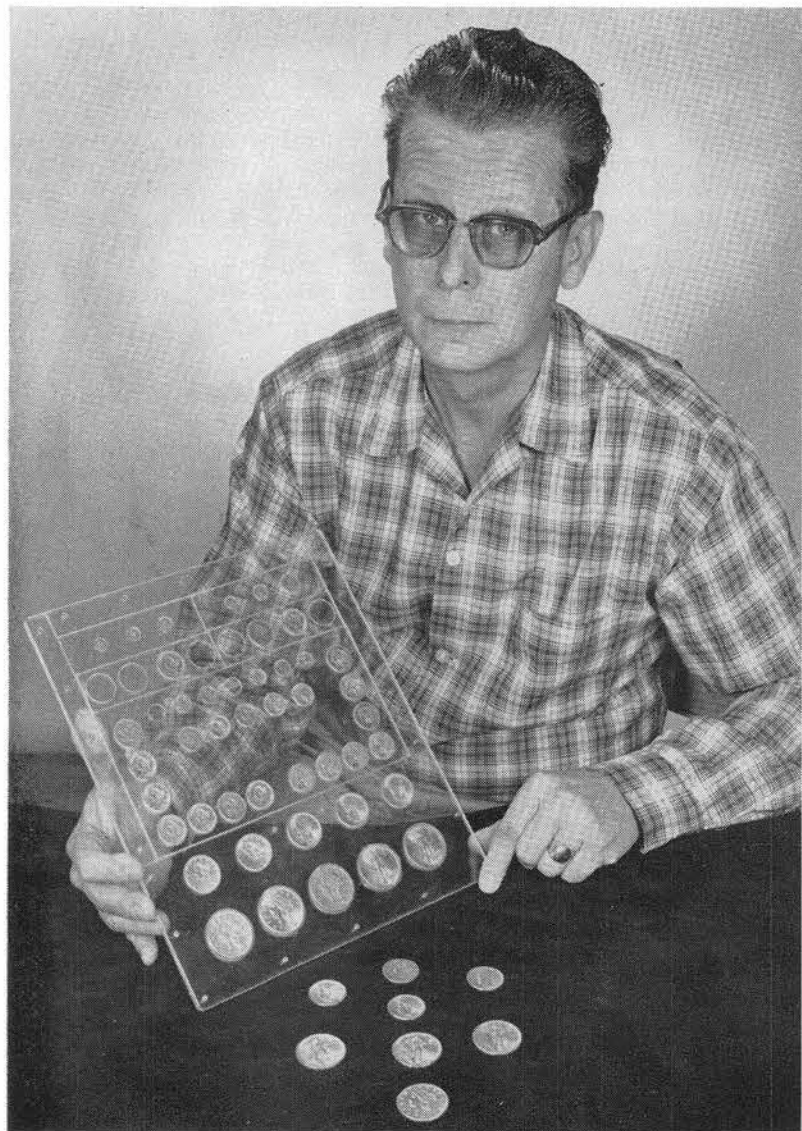
These skills will come only with higher education.

That's the word from the Bureau of Labor Statistics which reports that the years of schooling beyond the high school level result in an increase of \$40,000 of lifetime income for each additional year of schooling completed.

The Census Bureau reports that in 1958 an elementary school graduate could expect an average lifetime income of about \$185,000—compared with approximately \$258,000 for a high school graduate, a 42 per cent differential.

On the basis of this same data, the report shows, a college graduate can expect to earn about \$435,000 during his lifetime, \$177,000 more than the high school graduate.

The Census Bureau report giving these figures is entitled "Money Value of An Education." It states, "With the rising level of salaries and the shortage of skilled people it should not be difficult to realize that in coming years the pay differential for those with higher education will be considerably greater."



GOLD COIN COLLECTION is pride and joy of L. S. Meissen (4453-1). Included are U.S., Alaskan and California territorial coins in various denominations ranging from 25 cents to \$20.

Scarce Gold Coin Collection
Pride of Laurence S. Meissen

Since gold currency was withdrawn from circulation in the United States in 1933, a whole generation of Americans has grown up without knowing what a gold coin looks or feels like.

Laurence S. Meissen (4453-1) has a collection of gold coins guaranteed to put a glitter in anyone's eye.

Carefully mounted in plastic are nine double-eagles (the \$20 coin); nine eagles (the \$10 denomination); 17 half-eagles (\$5); five quarter-eagles (\$2.50); and four \$1 gold coins, the most valuable additions to his collection. The minting dates range from 1851 to 1924 and the coins are in "about uncirculated" to "uncirculated" condition.

Perhaps the most interesting coins in the collection are two sets of Alaskan and California territorial coins which Larry inherited from his father. The Alaskan coins are in denominations of \$1, 50 cents and 25 cents, the latter being about a half inch in diameter and correspondingly thin. They are dated 1909. His California gold coins were minted in 1857. Two are 25 cent pieces and one is a 50 cent coin. One 25 cent coin is only 3/8-in. in di-

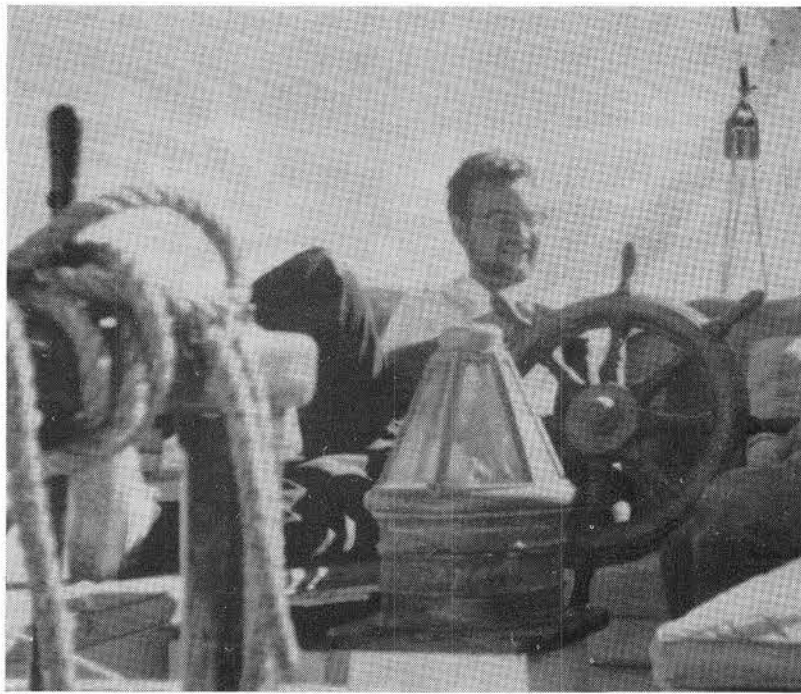
ameter. The other two coins are octagonal.

And where does one find gold coins, which are becoming more rare every year? Larry said, "My son has purchased eight coins for my collection and in addition I subscribe to five coin collector's magazines. Now and then other collectors have coins to sell or swap."

Welcome Newcomers

Jan. 2-12

Albuquerque	
George Bennett	9111
*Margaret Bolton	4623
*Dorothy L. Cochrane	2644
Josephine A. Dehon	4211
Evelyn D. DeLaPorte	3126
Donna S. Foor	3153
Louis P. Gallegos	4574
*Glenna Moseley	4333
Victor J. Pajunen	3444
*Evelyn L. Stewart	3126
Elfred G. Ullvarri	4613
Betty C. Vaughan	3126
Mimi C. Walter	4611
Thaddeus L. Werner	3444
*Mary H. Wolfe	3126
District of Columbia	
Walter H. Rice, Jr., Washington	1431
Illinois	
Don H. Killpatrick, Urbana	5132
Missouri	
Ronald W. Borgstahl, Kansas City	1424
New Mexico	
Alfred E. Garratt, Alamogordo	3454
Virginia	
Charles S. Fenn, Arlington	7524
* Denotes rehired.	
Returned from Leave	
Lela F. Martinez, Albuquerque	4424



VISITS ABOARD a 45-ft. ketch were among the highlights of Jim Roy's (1111-1) cruise from Guaymas, Mex., to Baja California.

Roys Forsake Desert Life for
Sailboat Cruise Off Mexico

Two adults, three children, and five weeks' supply of food, water, and gasoline sounds like a snug cargo for a 24-ft. sailboat. It was.

Two years ago Jim Roy (1111-1) and a friend made a three-week cruise of the Gulf of California on sail alone. Upon his return Jim purchased a craft of his own and since then has spent many weekends at Elephant Butte teaching other members of his family how to sail.

This winter Jim, his wife Pat, and children Rusty, 11, Cathy, 8, and Traci, 5, towed their boat from Elephant Butte Lake to Guaymas, on the coast of Mexico, for a three-week vacation. They were accompanied on the trip by another Albuquerque couple in a 20-ft. schooner. Both boats had auxiliary engines. A walkie-talkie radio was used to keep contact between the boats.

The 80 miles from Guaymas to Mulege, their destination on Baja California, took 29 hours—much of it on rough waters. During one calm stretch Pat baked a birthday cake for one of the children and the two boats were lashed together for a joint party.

Mulege is about two miles inland in a small tropical valley where dates, bananas, mangoes, and citrus fruit are plentiful. After four days of swimming, hiking, and beachcombing, the two boats sailed on to Coyote Bay and Santsapaqua, a little cove locally famous for its plentiful clams and oysters, white beach, and clear waters. The return crossing of the gulf was made in 26 hours. For 16 hours the Roys were completely becalmed and had to use their motor.

The Roys are enthusiastic about their trip, but admitted that a



ANTIGUA, Jim Roy's 24-ft. craft, anchored in Conception Bay off Baja California during several days of the family's recent Gulf of California cruise.

little more room or a little less cargo would have made them more comfortable. The children suggested fewer school books in lieu of more soft drinks.

Sympathy

To Elias Gabaldon (4575) for the recent death of his mother in Los Chavez, N.M.

To Betty Wilkins (2561) for the recent death of her father.

To Dee Stites (2641) for the recent death of her father.

To Katherine Reilly (3126/1112) for the death of her mother in Albuquerque Jan. 11.

To Victor Gabaldon (1431) for the death of his mother Jan. 1.

To Fred C. Carleton (3133) for the death of his father in Oneida, N.Y., Jan. 5.

To Paul Delker (3131-1) for the death of his mother in Henderson, Ky., Jan. 5.

To F. G. Gabaldon (4573) for the death of his mother in Albuquerque, Jan. 1.



Claudia Dias (8212-3)

Take A Memo, Please

Unsafe habits are like fine Chinaware. All you have to do to break them is just drop them.

Dr. S. P. Bliss to
Speak in Paris
This Week

Sandia Laboratory's medical director, Dr. S. P. Bliss, has been invited to speak at the Congress on Protection Against High-Power Accelerators in Paris, Jan. 18-20. Dr. Bliss will speak on "Medical Aspects of a Beta Ray Burn."

The congress is sponsored by the French Atomic Energy Commission, the Commissariat a L'Energie Atomique, Centre D'Etudes Nucleaires de Saclay (The Atomic Energy Commission Center of Nuclear Studies of Saclay).

Speakers from France, Italy, and the United States will participate in the congress.

F. C. Brockhausen
To Retire Jan. 31

Fred C. Brockhausen will retire at the end of January after



almost 11 years at Sandia Corporation. He has worked in the electronics field the entire time; the past two years in Electronic Inspection Section 4232-3.

Mr. Brockhausen plans to take it easy when he retires, and may take a trip where it's warmer. "I just want to loaf and live to be 105," he said.

He and his wife live at 925 Palomas Dr. SE. They have one son, who is a Navy helicopter pilot.

A. E. Willett Dies
After Long Illness

A. E. "Ed" Willett, a Sandia Laboratory employee for 10 years, died on Jan. 4 at a local hospital. He was 43.



Mr. Willett was a Buyer (4321-1) in Subcontract Department II at the time he went on leave

of absence, due to his illness, last February.

Survivors include his widow, two sons, a daughter, his mother, and a sister. The latter two reside in Ohio.

Congratulations

Born to:

Mr. and Mrs. E. C. Domme (4111) a son, John Christopher, on Dec. 27.

Mr. and Mrs. Fred Martinez (4151-1) a son, Mark Samuel, on Jan. 1.

Mr. and Mrs. Lynn N. Ernst (1424) a son, Bret G., on Dec. 28.

Mr. and Mrs. O. H. Schreiber (1442-3) a daughter, Lisa Marie, on Dec. 25.

Mr. and Mrs. Edward L. McKelvey (2344) a son, James Edward, on Dec. 29.

Mr. and Mrs. Ed Shaut (1431) a son, Dana William, on Jan. 6.



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New Grad Successful in First Sandia Task, Other Projects Turn Out OK at Same Time



THE STORY reported by the electrical system simulator is examined by Glenn Case (7124-3) who designed the device.

"It was a quick and thorough introduction to the weapons business," Glenn Case says. His first assignment as a newly graduated engineer at Sandia Laboratory was to design an electrical system simulator that would duplicate the electrical functions of a weapon. In addition, he was participating in Sandia's Technical Development Program and was spending several hours each day in classes at the University of New Mexico.

Glenn's answer to the assignment for Project Division 7124 is a neat six-ft.-high rack of electronics that does just what it is supposed to—duplicate exactly the electrical performance of a weapon system.

With the simulator and its associated data recording unit, actual weapon components can be subjected to systems compatibility tests, tests of individual component performance within the system, and checkout of telemetry packages prior to flight testing.

The simulator incorporates a number of switching modules that perform functions of various switching devices used in the original system. "The simulator duplicates these electrical functions and provides signals simulating those of environmental sensing devices. Cost would be prohibitive if the original components were used for repetitive tests," Glenn says. "Using the simulator to test the system prior to a flight test has also saved money. If the system and the telemetry package prove out prior to the flight, then it greatly increases the chances for a successful drop. Any failure can be corrected immediately without the expense of wasting a flight."

In designing the simulator, Glenn's first problem was to determine exactly the characteristics of all the components. "This meant spending a great amount of time with the component development engineers in 1300 and 1400 and the other development engineers in 7124. Their help was invaluable," Glenn says.

The design was finished in about six months and fabrication of the simulator required another three months. About this time Glenn's third child was born and he was facing semester exams at the University.

"What a relief when it was over," he says. "I had a new daughter, I passed the exams, and the simulator was a success. From the first tests we were able to see where improvements and economies could be made in the weapon system. I took some time off and got some sleep."

Two Disabling Injuries Mar Safety Record For Sandia Employees

Sandia Lab's safety record fell Jan. 5 in an accident involving a fork-lift truck. A Sandia employee tripped over one of the tines of the fork lift, fell, and injured his shin. He was not hospitalized, and returned to work after three days' absence. At the time of the accident, Sandians had worked 14 days — 490,000 man hours — without a disabling injury.

On Jan. 9, the record again ended when a Sandia employee at Clarksville Base, Tenn., slipped on a patch of ice, fell, and fractured his right forearm. He was not hospitalized, and was advised by a physician to remain home.

At the time of the accident, Sandia employees had worked for three days — a total of 105,000 man hours — without a disabling injury.

W. E. Taylor on Panel Evaluating Science Foundation Conferences

Warren E. Taylor (2411-3) spent several days in Washington, D.C., this month at the invitation of the National Science Foundation to help evaluate proposals for 1962 conferences for college teachers of science, mathematics, and engineering.

As part of the Foundation's purpose to aid teachers to improve their competence, NSF started sponsoring summer institutes in 1953. In 1961 the summer program consisted of 440 institutes for teachers of all grade levels and 23 conferences for college teachers. The Foundation provided \$23,700,000 for operation of these institutes and for stipends and allowances for about 21,000 teacher-participants. A slightly larger program is planned for 1962.

The evaluation panel in which Mr. Taylor participated was specifically concerned with summer conferences for college teachers of both physical and social sciences. Proposed conferences were submitted by 71 colleges and universities. NSF will consider the panel's recommendations in making its final decision for financial support of the specific activity.

The panel was comprised of 17 persons of different backgrounds and widespread geographical distribution.

Mr. Taylor has been at Sandia since 1952, working in the Research organization until two years ago when he transferred to



Mr. Taylor

Nuclear Radiation Standards Section. He has a Bachelor's degree in nuclear physics from Kalamazoo College and a PhD degree from Ohio State University.

Golf Association To Meet Jan. 22

The Sandia Employees Golf Association will hold a general meeting on Monday, Jan. 22, during the noon hour in Bldg. 815. Members will elect officers and make plans for the coming golf season, according to Jim Arnold (7322), president.

(Continued from Page One)

Need Letters With Logic

discussion. It means also that prior to the meeting, your congressman will have received a brief review of the items you wish to discuss with him. Bear in mind that you are being accorded an opportunity that is granted to relatively few persons — so make the most of it.

Getting Your Congressman's Ear

Effective communication requires something more than careful preparation and attention to details such as clarity, timeliness, brevity, and proper emphasis. Since the ultimate objective of communications is changed attitudes or behavior, the extent to which your congressman is predisposed to receive your message may also be important. Perhaps the most effective way to assure that your views will at least fall on receptive ears is to get to know your congressman even before he's elected. How? Be active politically. Join a political club. Make yourself known as an active club member and loyal supporter of club activities such as campaign efforts for prospective congressmen. Chances are if a congressman you've campaigned for is elected and he knows you've worked for his election your communication to him may carry more weight than that of constituents who are unknown to him.

Summary

If the mail reported to be flowing into Washington is any indication, not enough meaningful communication is taking place between citizens and their congressmen. If congressman-constituent communication is to be improved citizens must give more thought to where they stand on the issues and put greater preparation into formulating their views and communicating them to congressmen. This means selecting an appropriate means of communication and employing it effectively. And while the citizen's immediate objective in his communication may be to support the passage of a bill or urge a congressman to change his position on an issue, it is also a potential reminder to his government that the formulation of national policy should properly reflect a concern for the indi-

vidual. Thus, through accepting his obligation to communicate regularly and effectively with his elected representatives, each citizen can assume some measure of personal responsibility for the kind of government he lives under.

Addressing Your Congressman

When writing to your senator use the following style:

Envelope Address

The Honorable (his name)
United States Senate
Washington 25, D.C.

Salutation

My Dear Senator (last name)

Complimentary Close

Respectfully yours, or
Very truly yours,

When writing to a member of the House of Representatives, use this:

Envelope Address

The Honorable (his name)
House of Representatives
Washington 25, D.C.

Salutation

My Dear Mr. (last name)

Complimentary Close

Respectfully yours, or
Very truly yours,

* * *

The Senate

California

T. H. Kuchel (R)
Clair Engle (D)

Nevada

Alan Bible (D)
H. W. Cannon (D)

New Mexico

C. P. Anderson (D)
Dennis Chavez (D)

The House

California

W. S. Mailliard (R), San Francisco
J. F. Shelley (D), San Francisco
J. F. Baldwin Jr. (R), Contra Costa
Jeffrey Cohelan (D), Alameda
G. P. Miller (D), Alameda
J. J. McFall (D), San Joaquin
C. S. Gubser (R), Santa Clara
J. A. Younger (R), San Mateo

Nevada

W. S. Baring (D)

New Mexico

J. M. Montoya (D)
T. G. Morris (D)

Section 3446-3 Cleans Files . . .



CONDITION OF FILES in Engineering Release Section 3446-3 before and after a survey conducted by Records Management Division 3442 is illustrated by Priscilla Myers (3446-3). The survey has enabled Engineering Release Section to return eight safe-files to Office equipment stores with plenty of working space in remainder.

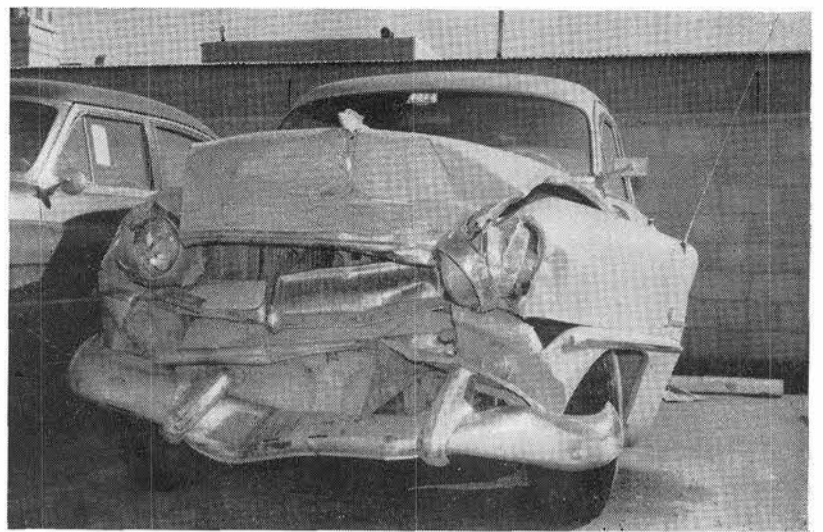


UNNECESSARY file material is discarded by Eunice Goodman (3446-3) during a recent survey by Records Management Division 3442. Material in barrels represents about half of records cleaned from files of Engineering Release Section 3446-3.

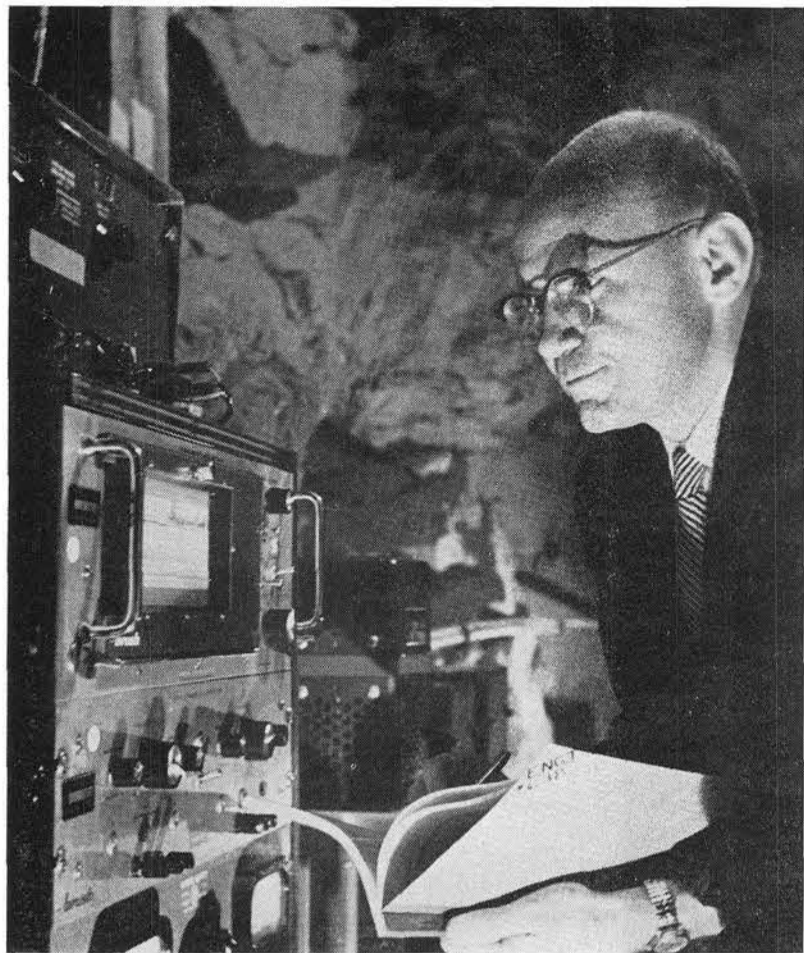
Reports on Gnome Given at Sandia to Capacity Audience

Four lectures on the planning and results of Project Gnome were presented at a meeting of the Sandia Laboratory Research Colloquium at the Corporation theatre on Jan. 10. The lectures were repeated to a capacity audience on Jan. 11.

Speakers at the meetings included A. D. Thornbrough (7251-1) who spoke Jan. 11 on long-range planning, outcome of experiments, and Sandia participation in the Gnome program; W. D. Weart, (5112), who discussed physical effects work and seismic phenomena; M. L. Merritt (5112), who discussed general purposes and impressions of the Gnome program, and who commented on the outcome of several of the experiments; and H. W. Church (5114), who discussed microbarographic instrumentation and results at Gnome.



TOTAL LOSS—This is the way Virgie Haverty's car looks after a recent accident. Seat belts prevented possible serious injury to her or passenger Art Cordova, her "share-the-ride" companion.



OSCILLOGRAPH TRACE recorded by readout system of new Sandia seismometer is logged by C. E. Kreitler (1322-1), who perfected the system. The improved instrument is sensitive to earth motion as small as one millionth of an inch.

Sandia Seismometer Detects Minute Shift in Earth's Crust

A unique horizontal seismometer developed by Sandia Corporation's Advanced Development Division 1322 demonstrated new measurement capabilities during recording of seismic waves generated by the Project Gnome nuclear shot last Dec. 10. The new instrument is sensitive enough to record earth movements as small as one millionth of an inch.

The seismometer is based on an original concept by Donald F. Wilkes (1322-1), who designed the basic sensing unit.

"Seismic waves, which are caused in the earth's crust by earthquakes and other phenomena, travel from the source like ripples from a pebble dropped into a pond," Don explains. "They cause both vertical and horizontal movements in the earth's surface."

"Seismometers are designed with a weight held in space by a support in such a way that when the earth moves, the support transmits almost no force to the weight," he says. "Thus, the weight essentially stands still while the earth moves under it. This relative motion is sensed, amplified, and traced on a chart as a permanent record."

In order to measure seismic waves of very long periods (the period is the time between two successive crests of the wave), extremely small "restoring forces" between the weight and its support—forces which act to move the weight after the earth and its gravitational attraction have shifted beneath the weight—must be attained.

"In horizontal seismometers, one way of obtaining low restoring forces is to use a pendulum with a very long distance from the point of suspension to the weight or bob," Don says. "However, a conventional pendulum capable of tracing some of the extremely long-period seismic waves that are desirable to measure would require a two-mile length or radius. Fortunately, we can obtain the radius, not by suspending the bob from a pivot, but by causing it to traverse the arc of a circle whose radius of curvature is two miles."

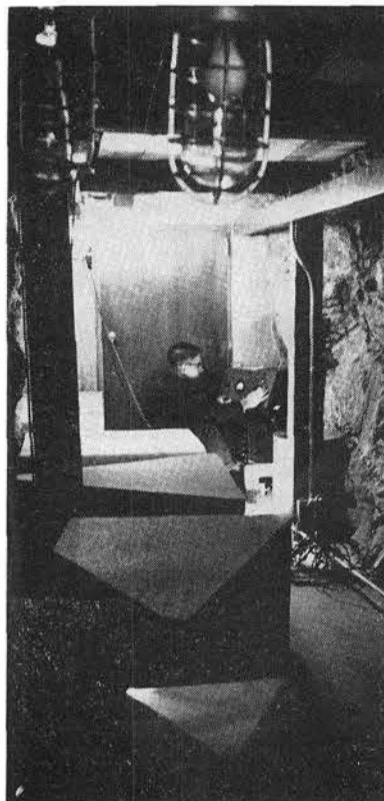
This arc is obtained in the Sandia Corporation seismometer by the slight bending of a steel shaft. The "bob" in the new instrument is a hollow cylinder which rides the curved shaft on an air bearing, created when the

cylinder is rotated rapidly. Rotation of the cylinder is accomplished by driving it as the rotor of an induction motor, similar to that used in an electric clock.

The electrical readout system for the new seismometer was designed by C. E. Kreitler (1322-1). "We think that the readout system is unique, since the seismometer measures earth displacement rather than velocity," he commented recently.

Earth displacement is sensed by a pair of cylindrical capacitor plates attached to the cylindrical bob. These capacitor plates are concentrically mounted with another pair attached to the instrument housing. During displacement of the earth, the housing capacitor plates move to either increase or decrease their mesh with the plates mounted on the bob, thus generating a voltage proportional to the displacement. The voltage is amplified and used to drive a pen recorder.

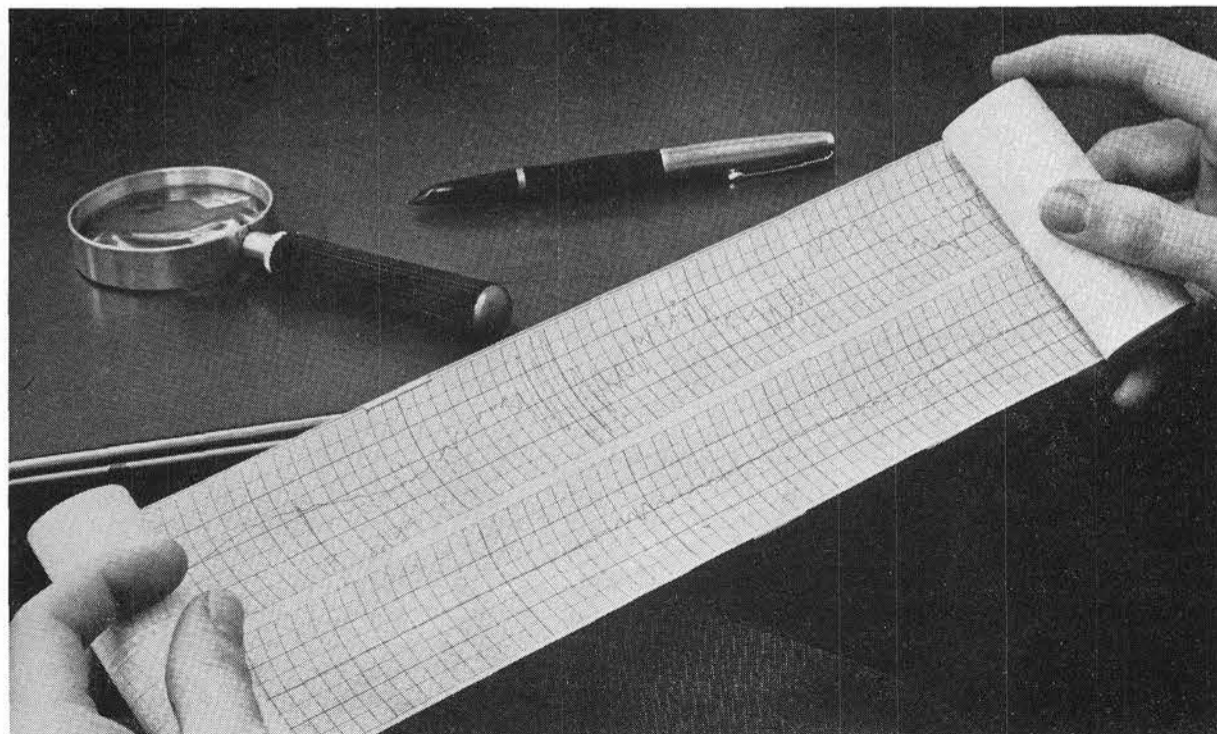
"A filter is used in the readout system to eliminate signals caused by the natural tilting of the earth," Mr. Kreitler explained. "In order to record earth movements as small as a millionth of an inch, the amplification for



CHECKING OUT performance of new Sandia seismometer at U. S. Coast and Geodetic Survey tunnel near Isleta, N. Mex., is D. F. Wilkes (1322-1), designer of basic sensing unit.

the system—the ratio of pen motion to earth motion—is about 40,000 to one."

The seismometer is presently located in a vault tunneled in a granite hill at the U. S. Coast and Geodetic Survey Seismology Laboratory near Isleta, N. Mex. It was here that the recordings of the Gnome shot were made. The director of the Seismology Laboratory, Herman J. Wirz, has stated, "The new design approach and the resulting longer period of the horizontal seismometer as developed to its present state by Sandia Corporation are of particular interest to us."



GRAPHIC EVIDENCE of high performance of new seismometer developed by Advanced Development Section 1322-1 is illustrated above. Paper shows seismic trace of Project Gnome detonation made with the new instrument near Isleta, N. Mex. Top portion of graph strip illustrates arrival of primary (P) wave at recording station. Bottom of strip presents less sensitive trace of the same wave.

Seat Belt Success Story Told by Two Sandia Corporation Employees

For the past couple of weeks, two happy Sandians have been borrowing soap boxes to tell any and all about the life-saving advantages of having and using seat belts in their automobiles.

The two "missionaries" are Virgie Haverty (4212-2) and Art Cordova (4233-3) who give credit for their being around today, alive and able, to the fact that one evening last month they were using seat belts.

"I was driving between 35 and 40 mph west on Menaul," Virgie says, "when all of a sudden this car appeared in my headlights right in front of me. There wasn't time to do anything. We smashed into him."

The other car had failed to stop at Morningside St. before pulling onto Menaul. The lights of this car were not on, Virgie says.

"Immediately after hitting the first car," Art (who was a passenger with Virgie) says, "we were

clobbered from the rear by a second car, spinning us around."

Virgie received a bruised cheek, knee, and a sprained wrist. Art got a bruise on the shin. These minor injuries were all they received from the accident.

"I don't like to think about what might have happened," Art says. "The car received two tremendous blows. Without the belts, I'm sure we would have been flung through the windshield."

Virgie's car was a total loss. "We have been sharing a ride to and from work for a couple of years," Virgie says, "and I give Art credit for the seat belts. He had them in his car first and I figured if he was convinced of the need to have them, then I needed them too."

"Everybody needs them," Art says. "Pass that soap box."

(Order blanks for specially priced seat belts are available from Safety Engineering Division 3211, Bldg. 813.)

Campaign to Clean Out Classified Documents Tops Previous Records

Sandia Corporation employees disposed of 313,415 classified documents during the annual clean-out-the-files campaign conducted by Security Standards and Development Division 3231. This compares with 66,639 documents in 1960, and 20,005 in 1959.

The 1961 purge was held during September and October. Unnecessary, duplicate, and obsolete documents were either destroyed, or sent to Central Record files or Archives.

Of particular mention is Division 7512 which reduced its document inventory by 232,202 during the two-month period, and then in the nine days after the drive (Nov. 1-9) disposed of 261,750 additional documents.

Commenting on the final results, Tom Hanna, supervisor of

Security Audit, Survey and Results Section 3232-1, said, "Accountability stations have done a good job of decreasing the number of documents in classified files. The fewer classified documents we handle, the better our security."

Following is the record.

Org.	Central Files	Archives	Destroyed	Total
1 and 100	10	0	220	230
1000	473	124	7,760	8,357
2000	524	167	17,890	18,581
3000	20	4,445	7,567	12,032
4000	48	1,455	3,743	5,246
5000	106	151	982	1,239
6000	0	42	18	60
7000	1,734	1,509	253,850	257,093
8000	2,051	442	7,960	10,453
9100	35	3	51	124
Grand Total	5,001	8,373	390,041	313,415

Supervisory Appointment

M. TAYLOR ABEGB to supervisor of Advanced Development Explosives Division 1311, Explosive Devices Department.

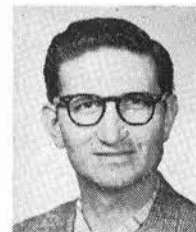
Taylor was hired by Sandia Corporation two years ago and was temporarily assigned to Division 8141 at Livermore Laboratory while awaiting transfer to Sandia Laboratory in February 1960 as a section supervisor.

Before coming here he was with the University of California's Lawrence Radiation Laboratory for four and a half years where he was responsible for a ferroelectric transducer program.

Taylor received his doctorate in explosives and a Bachelor's degree in fuel technology from the University of Utah. Part of his undergraduate work was taken at Cornell University and Brigham Young University.

He served three and a half years in the Army, part of the time in South America with the U. S. Military Mission to Costa Rica.

Taylor is a member of Sigma Pi Sigma, physics honorary, and Sigma Xi, research honorary.





On and Off the Job . . .

Big Campaign Going For Safety Everywhere

"Safety Everywhere — All the Time" is symbolized by the picture of the large clock in the corner of this page. This is the new theme Sandia Laboratory's Safety Engineering Department 3210 adopted to help stem a trend toward more on-the-job disabling injuries.

Sandia Lab employees suffered 15 disabling injuries during the past months of 1961. At least nine were due to a violation of common-sense safety precautions on the part of individuals, according to Don Rost, supervisor of Safety Engineering Division 3211.

"These disabling injuries give only a part of our accident experience," Don said. "There have been many more instances where an occurrence has resulted in a minor injury or no injury at all; yet the incident had all the potential of a serious or even fatal injury."

Safety awareness on the part of all individuals is the only way accidents can be prevented, Don indicated. Safety is a personal thing. It is as effective as the attitude and effort of the individuals who make a personal attempt to prevent accidents.

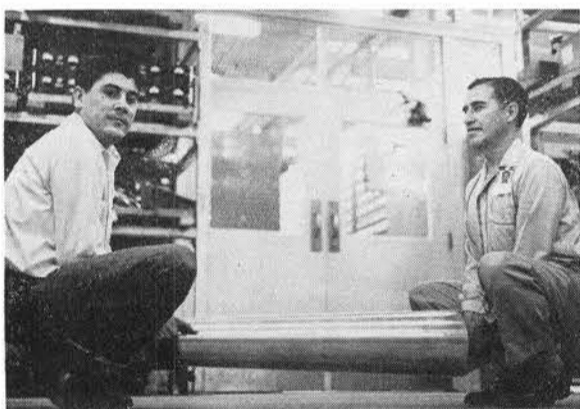
At work, safety is somewhat "automatic." Employees are issued protective glasses and other safety equipment. Sandia machines have built-in guards and safety features. Should we forget to wear safety equipment or indulge in unsafe practices, we will be reminded by our supervisors or by example of our fellow workers.

Off the job, however, we must set up our own rules, be our own supervisors, and set the example for our families. Safe practices at home, in our automobiles, and in our recreation is our own responsibility.

"Every time you look at your watch," Don said, "remember safety. Safety everywhere — all the time."



WOODWORKING, both on and off the job, is potentially dangerous. Always use proper procedures with your equipment. Here A. B. Perea (4513-2) demonstrates safe use of a power saw.



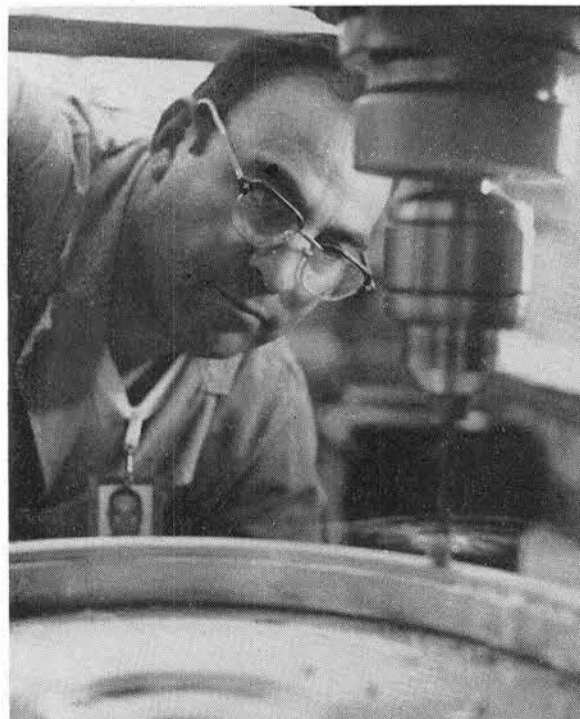
LIFTING PROPERLY, Joe Salazar, left, and Ernest Pavasci (both 4212-4) demonstrate lifting with the legs. Keep your back straight and bend at the knees when lifting. This will prevent back strains.



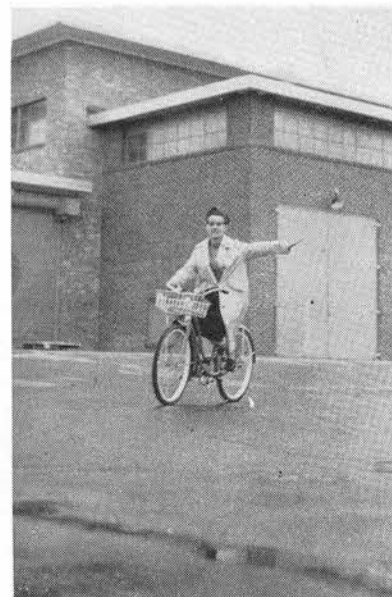
AUTO SEAT BELTS prevent injuries, declares Juene Cappuccilli (3126/2642). Serious injuries would be reduced by one-third if all Americans used seat belts, according to National Safety Council.



BACKING UP CAR in her driveway, Marge Smith (3211-1) is especially careful to watch for children at play. Always turn your head and look directly, Marge says. Never trust a mirror for a full view.



SAFETY GLASSES, safety equipment, and safe operating procedures are law in the Development Shops 4200. Antonio Garcia (4254-1) knows the importance of safety as do other employees.



SIGNALING a turn, Mina Carnicom (3311-1) wheels her bicycle around the Tech Area. Signals, courtesy, and a horn to warn pedestrians are necessary for bicycling anywhere.



SAFETY GLASSES with wooden splinter tightly lodged between frame and glass are closely examined by Fred Hohmann (8222-2) who was wearing them when the sliver struck the glass and deflected. A circular saw sent the piece of plywood flying with enough force to pierce his eye, if it wasn't for his safety glasses.



GREAT DECISIONS packets, for sale by Lola Brown (3421-1) at Sandia Lab's Technical Library, contain fact sheets and other discussion materials for those who wish to participate in the 1962 Great Decisions series. Great Decisions packets sell for \$1.50.

Albuquerque Great Decisions Groups to Discuss Vietnam

"Great Decisions—1962" Fact Sheets went on sale last week at Sandia Laboratory's Technical Library in Bldg. 804. With only two weeks remaining before the national discussion program begins, preparations for the program are speeding up in the Albuquerque area.

"The world is changing so rapidly that the complex of international problems is often more than most individuals can cope with," Max Linn (3420), Great Decisions Committee chairman, said in a newsletter last week. "It is in this complex, crisis-ridden period that those committed to democracy must actively support public discussion and consideration of public issues. The Great Decisions program is one proven method of presenting issues clearly for open, wide-ranging debate."

More than 1000 persons participated last year in small neighborhood groups that met once a week during February and March to discuss and study timely topics relating to foreign policy.

Background material for the eight topics of discussion is pro-

vided in the Great Decisions Fact Sheets. These are prepared by the Foreign Policy Association, national non-profit educational organization. The Fact Sheet kits sell for \$1.50 each.

The first topic, "Vietnam—Win, Lose or Draw," will be discussed on KNME-TV, channel 5, on Feb. 1 by a panel moderated by R. C. Colgan (3431-1).

Harvey Frauenglass (3423-1) has discussed the Great Decisions program at meetings of the University of New Mexico Student Senate and Student Council. He has addressed the Heights Optimist Club and the Albuquerque Exchange Club. Harvey is also preparing the first of a series of articles on the Great Decisions Program that will be published in the **Albuquerque Review**.

Many Sandians have participated in the program in the three years that Albuquerque has participated. Anyone interested in forming or joining a neighborhood discussion group is urged to contact either Mr. Linn, ext. 25162, or T. B. Sherwin (3431), ext. 26150.

Sandia Service Awards

15 Years



Val Gene Black
7115
Jan. 31, 1947

10 Years

Jan. 20-Feb. 2
David L. Brown, Jr. 3452, Wallace A. Hansen 4412, Lee L. Hofer 1442, George O. Thorne 2642, Arnold C. Lamb 8234, Joseph Paruta 4135, Dale S. Cone 3211, Altman Jones 4212, C. R. Meister 4542, Henry T. Flowers 4511, Lamar D. Treadwell 2532, Donald E. Goodrich 2411, H. Zimmerman, Jr. 4632.
Jack W. Reynolds 4321, Roma S. Kessler 7512, Frank J. Conrad 1122, F. S. Williams 2452, Carl J. Nissen 7214, Evelyn J. Hughey 4151, Joseph K. Rutledge 2641, E. J. Hartenberger 4575, Cecil E. Jordan 3231, Woodrow O. Lerke 4514, Neal N. Rozell 4511, Glen L. Wisner 4413, Charles E. Ross 4573.
Elmer C. Temple 4514, A. Lamar McKay, Jr. 4113, W. B. Norwood, Jr. 4113, Marvin L. Glaze 8213, John W. Cooper 4232, Arthur G. Everitt 4422, Virgil A. Bailey 2451, Earnest Yeager 1312, N. Earl Brooks 2642, Mike A. Bucklin 4573, Henry W. Carrejo 4621, Richard C. Jackson 4421, Preme Ulibarri 7321.
Lawrence E. Stone 4221, Leroy R. Petersen 4542, Quirin F. Simon 4413, Leonard Glover 4512, Ralph K. Fries 2533, Alfred G. Bauer 7321, Max O. Watson 4512, Delmar L. Longmire 1322, Delmar D. Poer 7536, George H. Duke 7122, Joseph A. Gregory 2332, James H. Kelly 3122, Donald S. Pitts 2543, Lane W. Peterson 7536, F. R. Moon 8240.

16 Departments Complete Second Year Without Security Infraction

Sixteen Sandia Corporation departments have earned places on the Security Honor Roll for the second straight year. Twelve other departments were named to the 1961 list for the first time.

These 28 departments are recognized by the Security organization because they had no security violations, infractions, or unaccounted-for documents during 1961.

Departments on the honor roll for the second time are 3150, 3210, 3220, 3230, 3320, 3330, 3340, 3430, 4120, 4250, 4360, 4510, 4540, 4570, 6020 and 6030. First-time departments are 1120, 1330, 2620, 3110, 3120, 3130, 3240, 3310, 4220, 4350,

7180, and 7210.

Plant Engineering and Maintenance Organization 4500, which has almost 600 employees, finished its second year with no security violations, infractions, or unaccounted-for documents. General Organizations 3100, 3200, and 3300 had perfect security records for 1961.

"Sandia employees are demonstrating that security-awareness is uppermost in their minds," say the Security people. "This is evidenced by the fact that more departments are on the honor roll than last year, and also because Sandia's total infractions for 1961 were 30 per cent less than 1960."

World War II Bombsight Principle Used in Super Accurate Hole Drilling Processes

Drilling holes in prototype printed circuit boards, formerly a "by guess and by golly" technique, is now being done with "bombsight" precision. This is being made possible with the aid of an ingenious combination of machinery developed at Livermore Laboratory by Electronic Fabrication Section 8223-3.

The new tool consists of an optical viewer and precision electric drill, both mounted above a two-axis milling table. Based on the principle of a World War II bombsight, the viewer is mounted a fixed distance from the drill, just as a bombsight would be located a fixed distance from the bomb bay doors.

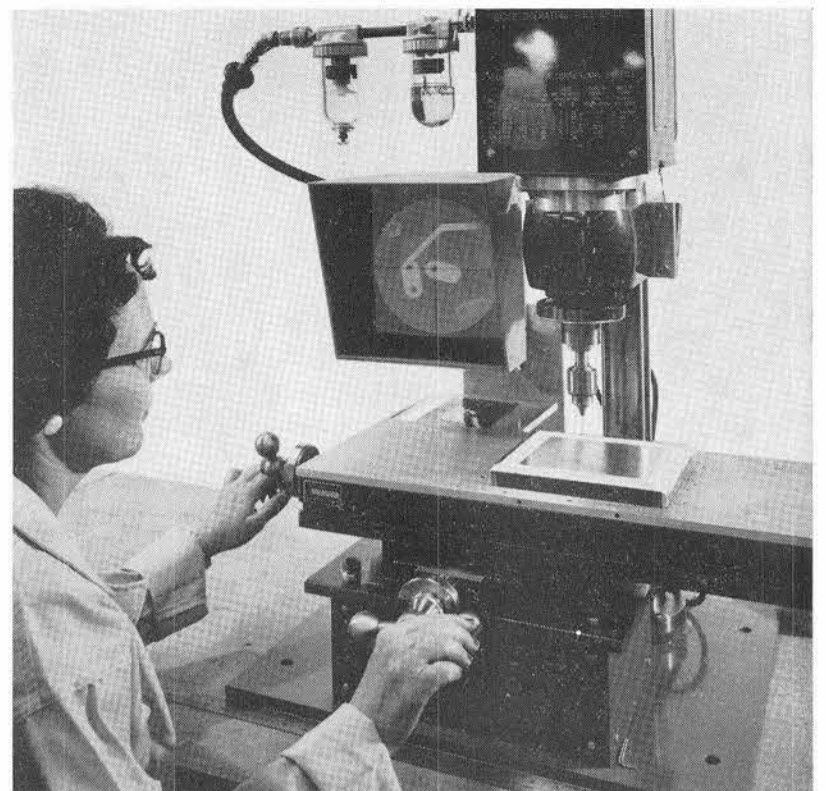
"Once the operator has the tool set up, all he has to do is sight the 'target' in the viewer, release the drill, and he gets a bull's-eye every time," says Ernie Alford, supervisor of the Electronic Fabrication Section.

The advantages offered by the new tool, according to Ernie, minimize human error, speed production, and reduce safety hazards. "Reliability far surpasses the level achieved by manual drilling," he says.

In charge of the development of the tool was Don Tassano (8223-3). Working with him were Bill Schmedding, supervisor of the Machine Shop, and George Dawson (8223-1).

Briefly, the tool works like this: a photographic film of the original printed circuit drawing is lined up on a glass grid on the milling table and projected upward into the viewer, enlarging the image area 10 times.

By moving the table the operator centers the image area, showing the holes to be drilled, in the cross hairs of the viewer. This automatically positions the printed circuit board under the drill bit. This process is continued, moving the table each time, until all holes have been drilled.



"ON TARGET," Jessie Berry (8223-3) makes final adjustments to milling table before drilling a hole in a printed circuit board. With the new printed circuit drilling tool, finished printed circuit boards can be turned out in half the time. The drill is actuated by a foot pedal on the floor, which greatly reduces safety hazards.

Extreme accuracy is essential in the production of printed circuit boards, Ernie points out. One failure in a printed circuit could cause a serious malfunction in an entire weapon system.

The most critical step in the production of the boards is matching the holes to the printed circuit pattern. In many circuits, the holes must be "plated through," a process in which the sides of the hole are coated with a conductive metal to allow current to pass from one side of the board to the other. When excess plating is removed, holes drilled off center may be left partially

unplated, which could cause a break in the circuit.

Before the introduction of the new tool, the drill operator drilled holes manually in printed circuit boards only after the boards had been marked with the printed circuit design. With the new process, the operator begins with an unprepared board, eliminating six steps in a 15-step process and cutting the time involved in half.

An added benefit of the new tool, according to Ernie, is that the operator remains a fixed distance from the drill, reducing the possibility of an accidental injury.

Security

Honor Roll

THIS IS TO CERTIFY THAT THE DEPARTMENTS LISTED HEREON HAD NO SECURITY VIOLATIONS, INFRACTIONS OR UNACCOUNTED-FOR DOCUMENTS IN

1961

1120	3230	4350
1330	3240	4360
2620	3310	4510
3110	3320	4540
3120	3330	4570
3130	3340	6020
3150	3430	6030
3210	4120	7180
3220	4220	7210
	4250	

Sandia Corporation

D. S. TARBOX
Director of Security and Industrial Relations

Kartoffelpuffers, Kartoffelsalat, Und Kalter Lachs On Coronado Club Menu

Coronado Club's "Hofbrau" tomorrow night is the first in a series of unique monthly events, according to entertainment director Jim Kelly (2632-2).

The Hofbrau will feature German food, music, and dancing. Included on the menu will be Sauerbraten mit Kartoffelpuffer (pot roast with potato dumplings), Brotwurst mit Kartoffelsalat (sausage with hot potato salad), Kalter Lachs mit Remouladen Sauce (cold salmon with a special sauce), and Eisbein mit Saurkraut (pig knuckles with sauerkraut).

Entertainment will be provided by an international folk dance group and two dance teams. Following this, Hank "Schultz" Chinisci will play regular music for dancing from 9 to 1.

The buffet will be served from 6:30 to 8 p.m. Free beer will also be available during this time. Tickets are \$2.60 per person for members, \$3.60 for guests.

A square dance will be held next Saturday night, Jan. 27, from 7:30 to 11 p.m. Caller is Bob Rausch from Los Alamos. Tickets are \$1 per couple for members, \$1.50 for guests.

Family Nite movie on Sunday, Jan. 28, will be "Francis." Free cokes and popcorn will be served during the show which starts at 6 p.m.

Tommy Kelly's combo will play tonight from 5:30 to 8:30 p.m. Social hour lasts from 5:15 to 6:45 and the \$1.75 buffet is served from 6:30 to 8 p.m. Next Friday night Frank Chewiwie will provide music.

AEC Classification Director Pays Visit To Sandia Laboratory

Charles L. Marshall, Director of the Atomic Energy Commission's Division of Classification, toured Sandia Laboratory's facilities on Jan. 16 and 17, and discussed classification policies and procedures with Sandia personnel. His visit was arranged by Sandia's Vice President, Weapon Programs, R. W. Henderson (100).

Representatives from Sandia Laboratory and from Livermore Laboratory attended briefings during Mr. Marshall's visit.

Sandia Employees Elected Officers of Gem Mineral Club

Sandians made a clean sweep of the three top offices of the Albuquerque Gem and Mineral Club during recent elections.

Installed on Jan. 8 were E. R. "Woody" Wood (4233-3), who was re-elected as president, Dean Wise (4231-3), first vice president, and James S. Reese (2452-4), who will serve his second term as second vice president and will be in charge of field trips.

Anyone interested in collecting or cutting gems or minerals is invited to attend the club's meetings. The meetings are held the second and fourth Mondays of the month at 8 p.m. in the Geology Bldg. lecture room on the UNM campus.

Members already are actively planning for the club's annual exhibit held during the State Fair. In addition the club contributes to a supporting scholarship awarded each fall term to a geology or mineralogy student at the University of New Mexico.

Distaff Bowlers Handicap Tourney Set for February 10

Coronado Club Ladies' Jewellee League handicap bowling tournament will be held on Feb. 10, with singles and doubles, no team events.

This tournament is open to all Coronado Club women who are also sanctioned members of the WIBC; all bowlers must have bowled at least 12 games by Jan. 22, and the bowler's highest average in a sanctioned league as of Jan. 22 will be used.

The entry fee is \$2.75 per event. Entries close Jan. 30. For further information call Alice Woodley (1431) at ext. 33131.

Basketball Standings As of Jan. 12

Team	W	L
2400, 2500, 7100, 4600, 9100	7	0
AEC, 5100	6	1
4400	5	2
1100, 1300	3	4
1400, 7200	3	4
4200, 4100, 4500	2	5
3400, 6000	2	5
9100, 7300	0	7



CERTIFICATE OF ACHIEVEMENT is presented to A. G. Bytheway (7321) by Maj. Gen. H. C. Donnelly, Commander, Field Command, Defense Atomic Support Agency, left, while Mrs. Bytheway, right, observes. A letter, presented with the certificate, commended Al for his outstanding performance of duties during the period from August 1958 to August 1961, when he was assigned as Technical Liaison Officer to Research and Development Group, FC/DASA.



FULL REGIMENTAL UNIFORM will be worn by Harry Doro (3452) when his Albuquerque Bagpipe Band plays for the first annual "Robbie Burns Night" at the Fez Club on Jan. 26. Children dancing the Highland Fling are Mary Catherin Harris and Ronnie Horn. Harry's tartan is of the Royal Stuart Clan.

Skirling Pipes a' Thru Evening to Greet Scots on 'Robbie Burns Night'

A' the Scots will gae to "Robbie Burns Night," Albuquerque's first annual celebration honoring Scotland's bard. It will be held at the Fez Club on Friday, Jan. 26, starting at 7 p.m.

The program will begin with the traditional ceremony, "The Piping in O' the Haggis." After dinner, there will be exhibition Highland dancing, the singing o' auld Scots songs, and quoting o' Burns' finest. There's also a possibility that a Wee Deoch an' Doris will be served.

A special feature is an imported movie in color o' Scotland, her lochs and her heather, her glory of bens. Thru it a' will be heard the skirling o' the pipes.

Pipe Major Harry Doro (3452) has his own Albuquerque Bagpipe Band and will be playing for the event. Other Sandians in the band are J. M. Ralls (7524), E. G. McGarvie (7512), Lloyd Hungate

(7513), and George F. Miller (4412).

The public is invited to attend. Tickets may be obtained from Harry Doro, AM 8-1257, Joe Ralls, AL 5-7835, or Ed McGarvie, AX 9-1641.

W. L. Green to Read Paper Before Members Of AIEE in New York

"An Experimental Study of Multiple Controllers for a Single Process" is the title of a technical paper written by W. L. Green (7145) and C. H. Weaver of Auburn University.

Mr. Green will read the paper at the American Institute of Electrical Engineers' winter general meeting to be held in New York City Jan. 28 to Feb. 2. The paper will also be published under the auspices of the conference.

SHOPPING CENTER

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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

- GE ROTARY IRONER, \$40. Larsen, AL 5-6407.
- LUGGAGE RACK for Porsche, \$25, originally \$33. Stirbis, CH 7-8105.
- SMALL TABLES, \$10 each; oak desk and double bed set, \$40; TV-radio-record player console, \$25. Frankel, 704 Dallas NE, AM 8-0100.
- '57 CHEVROLET station wagon, R&H, automatic, V-8, new brakes, 2 new and 2 snow tires, one owner, \$875. Garst, AL 6-5870.
- '48 DODGE coupe, R&H, reliable, always starts, good tires, \$100. Baxter, DI 4-7601.
- SEWING MACHINE, Singer Featherweight, all attachments and buttonholer, \$70. Erickson, 299-6824.
- POLAROID CAMERA with gadget case, accessories, \$30; Kenica II, 35mm, f2.8 lens, \$25; tree-tone clothes dryer, \$5. Weir, AX 9-1160.
- CHEERY TABLE, can be used as end table or night stand, \$15. Shepherd, AL 6-2059.
- 100 AMP. ALTERNATOR, 6-volt, Leece-Neville, complete with regulator, ammeter, brackets and wiring, \$45. Sublett, AX 8-1004.
- AMERICAN LEGION uniform complete with shirt and Sam Brown belt, size 39, \$15. Southwick, AL 5-3312.
- DROP-LEAF children's desk, \$5; roll-away bed, single size, \$15; baby crib, 6-year size, \$20; Cosco baby jumper chair, \$3. Russell, AX 9-0159.
- COMPLETE HAM STATION, NC-300, Pace-maker, 3 element Tri-Band beam, Ham-m rotator, 30' tower, 2-811A amp, plus misc. parts. Roane, 2909 Garcia NE, AX 9-1761.
- '53 1/2-TON DODGE pickup, 4-speed, good tires, \$325; 16" TV, RCA, good tube, needs transformer. Scranton, AX 9-5720.

- 17" TV set, \$15; full size mattress and springs; 35mm slide projector; men's ski boots; ladies electric razor. Spray, AX 9-0412.
- TAPE RECORDER, Bell & Howell, like new, \$160, new price \$260. Hodges, AM 8-5097.
- GIRL'S shoe ice skates, 2 pair, small sizes, \$3.75 pr. or both for \$7. Dodd, AX 9-6330.
- SKY LIGHTS, 52x52", trade for shop equipment or what have you. Villella, AL 5-2534.
- INEZ BRICK, 3-bdr., 1 1/2 baths, drapes, carpets, sprinklers, dishwasher, \$400 above appraisal, \$1600 down to present loan, immediate possession, no qualifying. Scott, AX 9-7893.
- TWO 760:15 w/w tires, tubes and wheels for late model Chevrolet; high chair. Wilson, AX 8-0049.
- STOVE AND REFRIGERATOR, \$60; 36" Tappan deluxe, simmer settings, oven pilot, Kelvinator, 12', both 10 years old. Carrick, AL 5-8281.
- 3-BDR., den, wbf, separate dining, a/c, landscaped, close to schools and shopping, low down payment. Prentice, AX 9-4595.
- COME AND VISIT THIS HOME, 3-bdr., LR, DR, large kitchen, carpets-drapes throughout, landscaped, 1600 sq.-ft. concrete patios, 2-car garage. Scott, AL 6-9708.
- PARADE PALOMINO Quarterhorse, large, powerful 3-yr.-old gelding, no bad habits, guaranteed sound, \$300 or will trade for Hereford cows or heifers. Jolly, TR 7-2474.
- FREE AIRDALE, male, age three, congenial outdoor type, good watchdog when home, needs high fence or ranch. Plumlee, BU 2-3224.
- ROOM SIZE WOOL RUG and pad, 6'x11'8", medium green, \$15. Stover, 1009 Indiana SE, AL 6-2439.
- REM. 30.06 with 2.5x scope, \$95; Cushman scooter, best offer. Parker, 2208 Inez Dr. NE, AX 9-9429.
- '58 LINCOLN 4-dr. hardtop, all white, factory air, premium tires, \$1700. Welker, AX 9-1179.
- ONE SET OF TIRE CHAINS, 8.00-14 or 7.10-15, \$6. Heckman, 298-3116.
- GE DISHWASHER and Easy Ironer, \$45 each. Bachand, AX 9-5167.
- DOUBLE BED, mattress, springs, chest, drawer, night stand, couch, chair, make offer for the lot or separate pieces. Chavez, AX 8-0674.
- '51 CHEVROLET, 2-dr., runs fine, body lousy. Adams, AL 6-7334.
- '50 MERCURY, new tires, \$250. Kohut, AX 9-9092.
- REFRIGERATOR, GE, 9 cu. ft., \$75. Jordan, AL 5-6612.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, Jan. 26

- KEYSTONE MOVIE CAMERA, f1.9 lens, also telephoto lens, \$30. Myers, AX 9-2219.
- '59 ALLSTATE MOTORCYCLE, 125cc, \$135. Costello, 1828 Blume NE, AX 9-0563.
- 10' CAMPER, 2-burner butane stove, new ice box, 35-gal. water system, sleeps four. McCormick, AM 8-2633.
- FREQUENCY METER, type BC-221-AH w/AC power supply, range 175 kc to 20 mc, \$55. Stueber, AX 9-2414.
- '58 CHRYSLER Saratoga, turquoise, new whitewalls, \$1400. Fitzgerald, AX 8-2505.
- ELM TREES, up to 3" in. diameter, yours for the digging. Ash, CH 3-1869.
- 17" CROSLLEY console TV, mahogany cabinet with doors, \$35, see 8703 Fairbanks Rd. NE after 5:30 p.m. Cooper.
- '54 CHEVROLET, 4-dr., R&H, one owner, 1203 Cerro Vista SW after 5:30 p.m. Vallejos, 243-3684.
- AMERICAN FLYER TRAIN on 5x9' board, 3 engines, 15 cars, 75' track, heavy duty transformer, many accessories. Rosenberg, AX 9-3418.
- SELL OR RENT 35', 1-bdr., Starr house trailer, clean and close to base. Fletcher, AM 5-0217 after 5:30 p.m.
- '53 STUDEBAKER, well-kept, clean deluxe coup. Harshman, 268-9009.
- BABY CAR BED and seat, \$6; Cosco walker, \$3; Irish Mail (pumper car), \$9. Weber, AX 9-1389.
- 4-BDR. ROBINSON, double garage, den w/fireplace, hardwood floors, pitched roof, corner lot, separate dining room, GI loan. Kintzinger, AX 9-7027.
- '61 Ford Starliner, std. and OD trans., positioner diff., 3 carburetors, (factory equipped), R&H, tinted glass, w/tires. Cornwall, AM 8-1943.
- EICO OSCILLOSCOPE, new, model 460, assembled, selling for kit price \$79.95; Eico tube-checker, model 666, also for kit price \$69.95; AM audio oscillator, \$75. Morrison, AM 8-1826.
- 10" CRAFTSMAN radial saw w/attachments; paint spray compressor and gun. Shans, AL 5-5673.
- ELEVEN METER QUAD ANTENNA and 15' tower, tower is fitted for rotor, \$10 each. Northrup, TR 7-1591 after 6 p.m.
- '54 INTERNATIONAL TRAVELALL, 4-speed, \$495; ice skates, ladies, size 5, white, \$5. Forsman, 299-5570.

- '49 JEEP station wagon, good engine and tires, \$150; HO and Lionel trains and accessories. Costello, AL 6-9702.
- WEIMARANER, male, 2-yr.-old, blue gray, not registered, make offer. Beadersted, AX 8-4590.
- 3-BDR., 1 1/2 baths, forced air garage, a/c, built-in range, forced-air heat, large walled lot, landscaped, many extras, priced right. Denton, DI 4-7480.
- CHIHUAHUA PUPPIES, 1 female, \$15, 3 males, \$20 each. Calvery, 299-0455.
- LIVING ROOM COUCH, used, \$50 or best offer. March, AM 8-7371.
- FULL-LENGTH COAT, Japanese mink, needs to be re-styled and glazed, best offer; B-flat clarinet, wooden. Hopper, 268-9092.
- SKI BOOTS, man's size 8, lady's size 6 1/2, well-padded, \$6 pr. Sherwin, AL 5-8866.
- MALE GERMAN SHEPHERD puppies, 2 each, 10 weeks old, \$25 without papers, \$50 with. Haverly, DI 4-1161.
- HI-STANDARD .380 and Savage .32 automatic pistols, trade for old knives, badges, coins or guns. Smitha, AX 9-1096.
- '55 CHEVROLET, 2-dr., V-8, \$350 cash. Roth, 429 Alcazar SE, Apt. A.
- CAMPING TRAILER, 15', Deville, '57 model, \$600 or best offer. Allen, 900 Cardenas SE, 268-1027.
- BARBEQUE GRILL w/electric spit, \$12; metal tea cart, \$10; chest, \$10; 3/4 Hollywood bed, \$10; miscellaneous. Troyer, AX 9-7105.
- 8MM BOLEX movie camera with Zoom Lens, will sacrifice. Baumgarten, AM 8-2826.
- KITCHEN DINETTE w/leather and four chairs, \$30. James, AX 8-0709.
- REMINGTON portable typewriter and case, \$17.50; Northland skis, metal edges, safety bindings, 6'8", \$15. Doggett, AX 9-7957.
- WESTINGHOUSE WASHER; play pen. Roane, AX 9-6554.
- BEE-HIVES, half price. Brown, DI 4-6831.
- '58 FORD FAIRLANE, 4-dr., R&H, Fordomatic, \$895. Tippy, 298-3758.
- GIRL'S FIGURE SKATES, size 5. Woodley, AM 8-6871.
- '57 FORD, 4-dr., V-8, auto. trans., clean, \$650. Ward, 2909 Valencia NE, AL 6-9286.
- STEEL GARAGE DOOR, 8x7' w/new hardware, \$35. Foster, 268-1284.
- '60 SEARS MOTORCYCLE, medium size. Smeltzer, AL 6-3908 after 5:30 p.m.
- 3-BDR. 1 1/2 bath, study, service room, central heat, a/c, carpet, drapes, fireplace, covered patio, walled, landscaped. Bortniak, 1416 Kentucky NE, 256-3177.

- '56 VESPA motor scooter, w/spare tire, speedometer, \$140. Patterson, AX 9-6590.
- WANTED
- RIDE or trade rides from vicinity 519 Solano SE, to vicinity bldg. 828. Brien, 256-2760.
- RIDE or will join carpool from vicinity Indian School Rd. and Girard NE, to bldg. 800-802 parking lot. Miller, AL 5-1324.
- USED BAR BELL set of 100 lbs. weight, more or less. Lewis, AX 9-7217.
- RIDE to and from Sandia, will pay expenses, 2716 Vista Larga NE. Dehon, AM 8-7132.
- RIDE 1 block from 1200 Yale SE. Davis, 243-2315.
- RIDE 1 block from 1100 Yale SE. Ruddle, 247-3287.
- RIDE from corner Gen. Chenault and Claremont to vicinity bldg. 818. Southerland, AL 8-1647.
- GIRLS LOOKING FOR a new roommate, age 21 to 25, to share our house with us. Moor, AL 6-4710.
- RIDE from corner of Escalante and Laguna SW to gate 7. Scott, CH 7-3461.
- TO JOIN carpool originating at or near 300 block Solano Dr. NE. Vickers, AL 6-1418.
- DIAL TELEPHONE in operating condition. Sundberg, AX 9-2177.
- HORN loaded enclosure for 15" speaker. Claassen, AL 5-4347.
- ONE TON chain hoist, 12' windmill pump, bath fixtures, kitchen cabinets, building supplies, misc. to trade for above. Sat., Sun., & evenings, Aarón, BU 2-3124.
- FOR RENT
- FIVE-ROOM HOUSE available Feb. 1, pay own utilities, 1805 Arno SE. Aragon, after 6 p.m.
- 2-BDR., unfurnished, brick, forced air heat, blinds, stove, refrig., tile bath, off-street parking, 1033 Louisiana SE. Huddleston, AL 5-1312 after 5 p.m.
- DUPLEX, 3 large rooms, nicely furnished, fireplace, garage, storage, completely landscaped, 407 Aliso NE. Smith, AM 8-1228.
- 2-BDR. APT. in brick triplex, storage space and washer rough-in, water and garbage paid. Tillman, AL 5-6292 after 5:30 p.m.
- LOST AND FOUND
- LOST—Key on ring with aluminum star, turquoise and silver tie chain, man's RH brown leather glove, ring of 5 or 6 keys, man's beige driving glove, brown and white sunglasses. LOST AND FOUND, ext. 26149.
- FOUND—Rhinestone bun holder, lady's tan cardigan sweater. LOST AND FOUND, ext. 26149.

Millions Fight Cold War Every Year And Exotic Drugs Really Don't Help

Take a glass of hard cider with cayenne pepper, soak your feet for half an hour in a mustard bath, then swallow a teaspoon of cool catnip tea. And your cold will vanish just as fast as it would if you were to gulp one of those revolutionary seven-layer, 15-minute miracle tablets which guarantees to knock out a sore throat, the sniffles, sneezing, a stopped-up nose, aches, pains and every other cold misery.

The cold truth is: No known drug in this world will prevent or cure a cold.

Then why do 140,000,000 Americans spend around \$350,000,000 each year for drugstore cold and cough medicines?

While not attempting to answer this question, Sandia Corporation's Medical Organization suggests that employees take a closer look at current medical findings dealing with the common cold.

Today, medical science knows: The only animal, besides man, that will catch a cold is the chimpanzee . . . women definitely are more susceptible to colds than men . . . a sneeze can spray cold germs three feet . . . common colds last between three and seven days . . . infectious diseases like measles, polio, parrot fever and influenza begin with common cold symptoms . . . opium addicts never catch colds.

It is known also: more than 43 million persons have four or more colds yearly . . . people may be carriers of cold infection without showing symptoms themselves . . . in about two-thirds of all cases,



colds begin with a sore or rough throat . . . in almost every case the predominant symptom is a runny nose . . . many attacks of hay fever are mistaken for colds . . . fever is rare in a common cold . . . there are such things as psychosomatic-caused colds.

Medical men know a great deal about colds. What they don't know, however, is how to cure one.

The mass of antiseptics, gargles, chest ointments, cough medicines, painkillers, decongestants, antibiotics and antihistamines on the market today are useless, the doctors say, in curing a cold. Vitamins and special diets won't help either.

The American Medical Association, for instance, says those decongestants—sprays, nose drops, pills, inhalers—while offering temporary relief by shrinking swollen nose tissues, frequently make congestion worse and interfere with the normal cleansing action of the tiny hairs in the nose. This eventually can cause sinus infection.

Some decongestant nose drops containing mineral oil, when taken excessively, have been known to spread into the lungs and cause a form of pneumonia.

Antihistamines, introduced in 1949, while perhaps beneficial to allergic attacks, have been known to impair vision, cause dizziness and produce headaches, says the

New York State Journal of Medicine.

Painkillers, even those like aspirin, do absolutely nothing for the cold, yet can cause an upset stomach, dizziness, ringing in the ears and can be dangerous to persons with peptic ulcers.

Antibiotics in the form of pills, lozenges and nose drops have been known to cause allergic reaction says the AMA. Also, frequent small doses of an antibiotic have enabled germs to develop an immunity to the antibiotic, thus rendering the drug helpless in more serious infections.

Since a cold infection is housed deep inside the body, antiseptic gargles are of no use against the cold. Gargling salt water will relieve an inflamed throat tissue just as effectively.

The common cold is a self-limiting disease. As the old saying goes, "Treat a cold and it lasts seven days; leave it alone and it lasts a week." Cold remedies just won't cure a cold.

Why? Because of a tiny criminal known as a virus. Medical men seem agreed that this tiny germ, smaller than bacteria and invisible under the ordinary microscope, causes the common cold.

It's been proven that a cold virus will grow, multiply and live for at least three years. Just one drop of a solution containing this virus is enough to give both man and chimpanzee a typical head cold.

Medical science, for years, has tried to isolate this virus in hopes that a preventive cold vaccine might be produced. To date, 10 cold viruses have been isolated. But still, there seem to be scores of unknown viruses.

Progress towards isolating these viruses has been slow because they can be studied only by observing the effects they produce in experimental animals or plants, and only man and the chimpanzee will react to virus injections.

Man doesn't respond every time. The famous Salisbury Colds Laboratory in England, in an extensive number of tests, was successful in transmitting colds artificially from one person to another only half of the time.

The chimpanzee, aside from being expensive and scarce, frequently develops pneumonia and dies during experiments.

Until better methods of examining and pinpointing viruses are found, it appears that colds and their complications will continue to be responsible for more illnesses and disability than all other diseases combined and will continue to cost industry about \$6,000,000,000 yearly in lost working time.

Exactly how does a person catch or spread a cold?

Kissing, coughing, sneezing and using a germ-carrier's wash towel seem to be the best ways to catch or spread a cold. Perhaps the best known carrier of cold germs is the handkerchief. School children seem to be major cold-carriers, since statistics show that they have about twice as many colds a year as adults, and mothers of school children have about twice as many colds as the fathers.

It's still a mystery why some people never have colds. Heredity may be a factor. Immunity, if there is such a thing, is not due to climate. Colds occur in all climates, strike all races and in all seasons. In the U.S., colds are most prevalent in January, April and September.

If man has any natural resistance to colds, it might come from nature itself. Within man's nose, for instance, are numerous defensive mechanisms against a cold—such as microscopic hairlike projections called cilia which move constantly, picking up foreign particles and carrying them to the



pharynx to be discharged or swallowed.

Logic and sense, though, may be man's best weapon against colds.

If man avoids the cold carrier or at least keeps a good distance from a sneeze or a germ-laden handkerchief, if he washes his hands often, especially before eating a meal or after touching a cold carrier, if he avoids chilling, wet feet, fatigue, and eats well-balanced meals, his odds of escaping that nose and throat nuisance are good.

To further escape the possible clutches of a cold, man should: keep his hands away from his nose and mouth, wear adequate clothing to keep his body warm, make sure the office and home are warm and free from drafts, but not over-heated, keep his sleeping quarters cool rather than warm or cold, keep physically fit through exercise, and take cool showers to keep the circulatory system in good tone and equipped to adjust to changes produced by chilling.

How does one spot an approaching cold?

The typical symptoms of a cold are a sensation of chilling, a dryness or irritation of the membranes lining the nose and throat, watery nasal discharge, sneezing, nasal stuffiness and usually a "wrung-out" feeling. A cold's incubation period is normally two or three days.

If a cold lingers over a week, it may not be a cold and a doctor should be consulted.

If you must take those miracle drugs to ease the cold's symp-



toms, remember that they could have harmful effects. A doctor can better prescribe the appropriate medication.

No medication, of course, will cure the cold.

Perhaps the classic example in medical history that points up the uselessness of "cold-curing" drugs, was a five-year study at the University of Minnesota by Dr. Harold Diehl.

Dr. Diehl divided thousands of students with colds into two groups. Half of the students received a well-known "cold remedy." The other half received a pill made only of sugar, which looked

exactly like the purported cold remedy.

At the end of the test, it was found that the students who had received the sugar pills were "cured" just as fast. In fact, the most enthusiastic endorsers were those who had received the sugar pills.

This type of "cure" is known as the placebo effect; that is, attributing to medicine the powers you wish it had. The sugar pill looked, tasted, and smelled like a cold remedy, so the student expected it to work. Further, he wanted it to work. Thus, when the cold disappeared naturally, the student felt the pill was responsible.

In reality, of course, the student should have praised nature itself and his own physical recuperative powers—the true victors over the common cold.

No Deuces Wild . . .

Organization 3232 Deals a New Deck for Lab Security Program

Sandia employees have either aces or deuces up their sleeves. What they pull out depends upon their security accomplishments in 1962.

Recently members of Patrol Division 3242 placed "Department Security Record" posters on the office doors of Sandia Laboratory's 86 department managers.

The green background posters have 12 playing cards on them, face down, representing the months of the year. At the end of January, all departments with no security infractions for the month can turn up an ace (supplied by 3232). If a security infraction occurs, the department gets a red deuce. Each deuce card has a monthly calendar on it so that the day the security infraction was incurred can be marked.

This procedure will continue until all cards are turned up. Since the posters are conspicuously placed, each employee can tell at a glance how his department is doing security-wise.

An added feature of the playing cards is the word "security" which appears in 19 different languages. Sandia's security symbol, Mr. "Q," is used as the trademark on the cards.



Sp4 Knetzer

David V. Knetzer Earns Top Award From Sandia Base

Army Specialist Fourth Class David V. Knetzer, on military leave from Livermore Laboratory, has topped competition from all the services at Sandia Base to win the honor of being named "Serviceman of the Month" for December, and "Serviceman of the Quarter" for the last quarter of 1961.

Sp4 Knetzer, assigned to one of the FC/DASA Training Groups, took his basic training at Fort Ord, Calif., and was designated "Distinguished Trainee of the Cycle."

He enrolled in the Nuclear Assembly Course at Sandia Base in February 1961 and, after graduating first in his class, was assigned duties as an instructor in the Training Group.

He received an Associate Technical degree in Mechanical Technology from Purdue University in 1958, and then went to work at Livermore Laboratory in Division 8116.

For his honors, Sp4 Knetzer received gifts from several local merchants.

D. K. Robbins Writes Article for Computing Association Publication

An article by Donald K. Robbins, supervisor of Advanced Development Division 3454, appeared in the December issue of Communications of the Association for Computing Machinery.

Entitled, "Computer Production of Peek-A-Boo Sheets," the article discusses a retrieval system whereby a complex question can be answered in seconds through use of punched records of all attributes or characteristics of the person or thing being studied.

Mr. Robbin noted in his paper: "The application in active use at Sandia Corporation is for identification of unknown elements and compounds from the three principal Hanawalt groups from X-ray diffraction patterns."

No job is so important and no service is so urgent that we cannot take time to perform our work safely.

Sandia's Safety Record

<p>Sandia Laboratory HAS WORKED 245,000 MAN HOURS OR 7 DAYS WITHOUT A DISABLING INJURY</p>	<p>Livermore Laboratory HAS WORKED 279,000 MAN HOURS OR 55 DAYS WITHOUT A DISABLING INJURY</p>
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