

# Sandia LAB NEWS



published every other Friday for the employees of sandia corporation, contractor to the atomic energy commission

Vol. 7, No. 26

ALBUQUERQUE, NEW MEXICO

DECEMBER 30, 1955



PAGES OF A USELESS CALENDAR flutter past the pretty head of Jo Ann Fresquez, 1925, as she declares, "Off with the old, On with the New!"

## Earthquakes Do No Damage At Salton Sea Base

Facilities of the Salton Sea Test Base operated by Sandia Corporation in the Imperial Valley of California have not been damaged in the recent series of earthquakes in that area.

Sandia scientists who are well acquainted with the area surrounding the test base say that most of the damage was south of the San Andreas fault which lies south of the Base. The most severe damage was centered near Brawley Calif., some 35 miles from the Base.

However, the 'quakes have caused some inconvenience in the use of ballistic cameras which are "oriented" by association with established reference points. Some of these points have shifted minute distances, due to the disturbance in the earth.

Al Gruer, manager of the Instrumentation Services Department, 5210, reports that of even more concern than the recent earthquakes is the apparent slight rolling motion, or oscillation, of the earth in the area.

"We can see an instrument base move if we put a precision level on it," he says. Al points out that there are many theories put forward for this unusual movement of the earth, but the exact cause has not been established.



Brig. Gen. W. M. Canterbury—Lt. Col. T. D. Harrison

## DSM Awarded to Tom Harrison for Outstanding Service While Prisoner

### Military Engineers Organize New Post

The newly-formed Albuquerque post of the Society of American Military Engineers meets Jan. 11 at Leonard's Restaurant, according to Earle George, 1722. Time of the dinner meeting is 7 p.m.

Lt. Col. Thomas D. Harrison, a Sandia Corporation engineer in 2551, has been awarded the Distinguished Service Medal for exceptionally outstanding service while a prisoner of war in North Korea.

Col. Harrison, an Air Force pilot, was shot down in May, 1951, and remained a prisoner until August, 1953, when he was returned to freedom in Operation Big Switch.

The DSM was presented to Col. Harrison by Brig. Gen. William M. Canterbury, Commander of Air Research and Development Command's Special Weapons Center, in Albuquerque.

The citation read in part:

"Despite the unskilled amputation of one injured leg, and six crude and primitive operations on the remaining one, inhumanely brutal beating, long periods of sadistic torture and ruthlessly insistent interrogations, Col. Harrison, despite his weakened condition, refused to divulge security information to the enemy.

"In November, 1951, during the forced winter march of 140 miles from Kangdong to Pingchon-Ni, Col. Harrison, although compelled to hobble along on crude and makeshift crutches, and clad in only lightweight clothing, frequently surrendered his place on the one small ox-cart to other prisoners whom he considered in worse condition than he was.

"Col. Harrison was hated and feared by both North Koreans and Chinese Communists for his aggressive belligerence. His outstanding courage and leadership was an instrumental factor in inspiring other prisoners of war with the will to resist the enemy."

Tom came to Sandia soon after his return to the States at the end of the Korean Conflict.

## Two Bands Playing For Dance at Club Tomorrow Evening

Lou Pinger's Orchestra, and Tommy Kelley's Band join their musical talents tomorrow night to toodle away the Old Year and welcome the New at the Coronado Club annual New Year's Eve festivities.

Pinger's music can be heard in the main ballroom, Kelly downstairs, starting at 9 p.m. Included in the admission charge are hats, favors, and a midnight breakfast of coffee, bacon, and eggs.

## John Hess Returns To Western Electric

John Hess, formerly supervisor of the Disbursements and Clerical Procedures Auditing Division, has returned to an assignment with Western Electric in New York City. He started work Dec. 1 in the Defense Projects Division at 220 Church Street.

Mr. Hess came to Sandia Corporation from W. E. Hawthorne Works, Chicago, in January, 1950. He was first assigned as supervisor of the Cost Division in 4150.

Mr. Hess's wife and children are still in Albuquerque and will return East after the first of the year.

### Might As Well Start Now

# Federal Income Tax Deadline Nears

Material in this article is based on information from the American Institute of Accountants, the national professional society of certified public accountants.

Income tax time isn't the time for dreamers but it need not be a time for nightmares—as long as the taxpayer knows what he is doing and sensibly tackles the problem of completing his tax return.

You can dream, if you wish, and conjure the vision that your wife will present you with sextuplets tonight (\$3,600 tax exemption as a child born prior to close of the old year is considered a dependent the whole year) or you can visualize the depletion allowance on your oil wells.

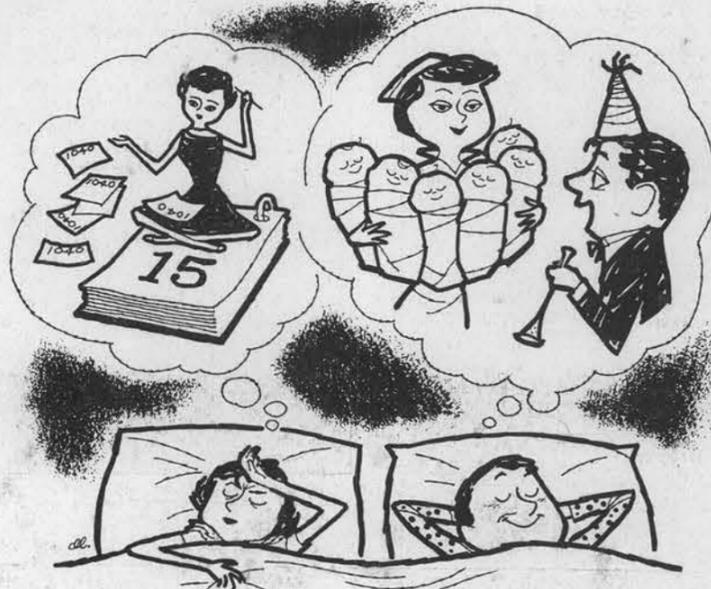
Don't dream up a mental block about an April 15 deadline for mailing in your return. This year it's April 16, the fifteenth falls on Sunday.

As usual you can get a good running start on that deadline for Sandia Corporation W-2 forms reporting the wages paid you and the tax withheld will be delivered to you about Feb. 1.

### Some Suggestions

Tax experts are full of advice this year and every year which will help make your reporting job easier and perhaps your tax payment less. Without going into the finer details of income tax reports, here are a few tips which may help many Sandia taxpayers with their federal income tax return.

Married couples usually can save by filing a joint return. And usually filling out form 1040 in detail, in-



DREAMS, NIGHTMARES—Income taxes are great material for dreams and nightmares. Don't let them get you down—start early on your return.

stead of taking the standard deduction, will save money.

In some cases, dependents who earn more than \$600 may be listed as another exemption. For example if your son to whom you contribute more than half-support is a full-time student, even though he earns more than \$600 during the summertime he is still considered a dependent.

If several members of a family provide support for another member, but none of them provides more than half support, the deduction may be taken by one person if the others sign a Multiple Support Agreement form.

### Investors Save

Those having outside income from dividends will save money if they remember they do not have to pay tax on the first \$50 of divi-

dends. In a joint return each person may receive \$50 in dividends tax free.

Taxpayers again this year should remember to subtract from total earnings the amount received as wages while extended sickness kept them from work, up to \$100 per week. This exemption commences after the first 7 days of illness unless any one day of the entire illness was spent in the hospital in which case the first seven days' wages (up to \$100) are also exempt.

Medical expenses in excess of 3 per cent of gross income may be deducted. There is, however, a limitation of 1 per cent on drug costs.

Interest on the mortgage and loans from the bank are deductible. So are charitable contributions including the value of clothing and other goods given to charity. In-

vestigate to see if you have any other deductions. These may include real estate taxes, losses not covered by insurance, sales tax, and in some states (New Mexico for example) state gasoline and cigarette taxes as well as state income tax.

Expenses for care of a disabled dependent may be deducted up to \$600, but must be reduced by the amount the gross income exceeds \$4,500.

### Get Started Early

All the experts in the field agree on this advice: Get started early. If you have any questions get in touch with the Internal Revenue Service. If you have problems that require independent professional assistance, be sure your advisor is properly qualified.

The Sandia Corporation booklet racks will carry a pamphlet which will help you in making out your return. The forms sent you by the Internal Revenue Service also will contain instructions.

Be sure to check all your data against the instructions—even the tips given above may be subject to certain additional requirements before they will benefit you.

# SANDIA LAB NEWS

Friday, December 30, 1955

Published every other Friday for the employees of Sandia Corporation, contractor to the Atomic Energy Commission.

Editor, Robert S. Gillespie  
Assistant Editors, Frances Ramsey, William H. Puder

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Telephones: Sandia Base Extension 25253 or 26135



## Complete Safety—That's The Goal

If Americans employed in industry wanted to keep themselves safe as possible they'd remain on the job 24 hours a day, seven days a week. For it is a fact that persons employed in industry are in less danger of accident while at work than they are at home, and certainly safer than they are in an automobile on the highways.

Looking at the cold statistics for 1954 (1955 figures will not be complete for a few months) we see in that year 29,500 industrial workers were killed and 2,300,000 were injured away from work, while 14,000 were killed and 1,850,000 were injured on the job.

In 1954, industrial workers injured off the job lost a total of 55,000,000 man-days compared with 40,000,000 man-days lost by workers injured on the job.

Figures for both on-the-job and off-the-job injuries and deaths are grim, but at least the on-the-job figures indicate safer environment and habits.

Here at Sandia Corporation the injury frequency rate for the first 11 months of 1955 is 76 per cent below the national frequency rate for our industrial classification. The disabling injury severity rate is more than 92 per cent below the average for our industrial classification. That looks even better.

But stop and take a closer look!

Not one of our disabling injuries this year was caused by unsafe working conditions. They all could have been prevented by exercising greater caution in the work being performed.

The staff of the Safety Assurance Department spends no time gloating over a good safety showing—they are interested only in complete safety for Sandia Corporation employees, and there's always room for improvement.

Sandia employees can reduce the number of accidents on the job still further. It has been done from year to year recently. In 1956 join the drive—look alive and stay alive.

### 'Cause He Likes It!

Stoughton Bell just likes a beard, that's all, and he's worn one most of his adult life. He has fixed upon the present Van Dyke because it's cooler in New Mexico summer



weather. Stoughton, a mathematician in 5124, says his beard is five years old, and represents the remains of a full beard he wore some time ago. Biggest advantage, he claims, in wearing a beard is that it fits so well into his hobby of parlor magic. Says his fellow magician members of the International Brotherhood of Magicians are envious. The audience watches his beard instead of his hands.

### They Love Him

Fred Darugh, 5311-4, one of Sandia's accomplished magicians, has played to many an appreciative audience. But the spectators most enjoyed by Fred were the youngsters at the Barelans Community Center a few nights before Christmas. Crippled children, youngsters with cerebral palsy and muscular dystrophy and mentally retarded boys and girls were treated to a dinner, then Fred went into his act. He wowed the kids and the kids charmed Fred.

### Getting Well

Dave Poli, 2532, is now back at work after being in the hospital for an appendectomy. Jerry Neuberger, also 2532, is in the hospital during the holidays but is ready to welcome guests in her Bataan Hospital room, 402.

### Works With JC Group

Ed Kubiak, 2532-1, as a member of the Albuquerque Junior Chamber of Commerce, is helping stage a radio forum which will attempt to answer questions on civic affairs. Ed is helping collect queries which in turn will be answered on the program either by members of the JC group or by public officials.

### Christmas Kindness

Organizations 1925-5, 1941 and 1942 finished off the Christmas Season with true spirit by raising \$91 for needy families. The committee in charge was: Onie Perea, 1942, chairman; Harvey Large and Jeanette Staggs, 1941. The money was spent for food for four families suggested by the Council of Social Agencies.

### To Idaho Falls

Dr. Louis S. Gerber, who has been supervisor of the Clinical Division of the Sandia Corporation Medical Department, has resigned and is going to Idaho Falls, Idaho, where he will be with the Idaho Falls Operations Office of the Atomic Energy Commission. He will be working in the Health and Safety Branch.

### Military Report

Sandia Corporation now has 107 employees on military leave of absence. Eighteen have come back to work this year and 41 have entered military service during the same period. A total of 246 has gone into service since August, 1950, and 105 have returned to their jobs—military service behind them.

### S. S. Greetings

Gene Abbott, 3125, who regularly handles deferments, military liaison matters for Sandia personnel, got himself a GREETINGS! this week, from a friendly organization: Selective Service. Abbott is breathing easier now, after the initial excitement. Seems they were Christmas greetings.

### Booklets Coming

Booklets being readied for the Sandia Corporation Booklet Rack service the next few months are aimed at saving money for all Sandians, also offer some timely cooking tips, for outdoor and indoor kitchen cookery. "All About Eggs," a booklet on fancy egg dishes is to be issued shortly, and the "Employee's Income Tax Guide" comes out about that time. "Barbeque Cooking" will appear in late spring. "Great Moments from the Bible" and "125 Simple Home Repairs" are other booklet rack future attractions.

### More Christmas Giving

Christmas had a new meaning for an indigent family of 11 in the Cedro Canyon Area of the Manzano Mountains, according to Jo Abraham, 2463, Technical Art Division. Artists, supervisors and secretaries have provided food, money, clothing, and took the items into the canyon late in Christmas week. Several cars were needed to deliver the gifts.

### Newcomer

A newcomer in the home of Mr. and Mrs. Frank P. Hudson is an adopted son, Christopher, who joined the household Dec. 16.

## Caravan Club Plans To Sponsor 9-Week First Aid Instruction

Members of the Amateur Radio Caravan Club of New Mexico will meet on the air at 7:30 p.m., Jan. 4. No special program activity is planned.

The Caravan Club will sponsor a nine-week first aid course beginning Jan. 11, according to Jim Stueber, 5523, publicity chairman. The class meets on the air Wednesday evening at 7:30, then proceeds to the Clubhouse of the Sandia Base Radio Club in Bldg. 364 on the Base on Jan. 11.

For the Jan. 25 meeting, members will assemble at the Lovelace Clinic Therapy Building on Gibson Blvd.

### Feliz Ano Nuevo

On the front of his home on Sandia Base Cory McDonald, 1630, extended "Merry Christmas and Happy New Year" in Spanish so artistically that he won first prize for a home decoration contest. The competition was sponsored by the Sandia Base Woman's Club.

### "Saint Nicke" Rides

An artist in 5521 designed a portrait for the Christmas season which depicts good ole St. Nick astride a rocket. Entitled (what else?) "Saint Nicke on a Nike."



"ABOUT THAT ESTIMATE, MR. WARSON, IT'S A LUCKY THING I TOOK YOUR TELEPHONE NUMBER..."

### Teaches Library Class

Charles W. Sargent, Library Services Division, will teach a course in Library Science at College of St. Joseph in Albuquerque beginning in January. The night-scheduled course is entitled "History and Philosophy of Libraries and an Introduction to the Tools of Librarianship."

### Remember Christmas

Organizations 5520 and 5510 collected more than \$200 toward Christmas food and clothing parcels for the needy of Albuquerque. In Building 802, Organization 2462-1, has also raised money, food, clothing, and toy parcels for Albuquerque's less fortunate families. Recipients of the donations were chosen by Albuquerque's Social Welfare Center, it was announced.

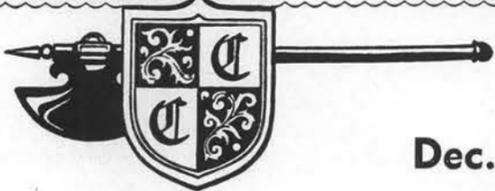


BABY SITTER — Kathryn, 21 months old, and Karen Kay, 3 weeks old (when this picture was taken) are daughters of Charles E. Katzenberger, 1924.



BEST OF BREED—C. A. Leemhuis, 5523-5, displayed this miniature schnauzer in Amarillo, Tex., this fall, and the dog won his 31st best of breed award. The dog's name: Ch. Jonaire Pocono Make It Snappy II.

## coronado club



Dec. 30-Jan. 14

Sun., Jan. 1, 1956 HAPPY NEW YEAR! Club Closed	Mon., Jan. 2 Open	Tues., Jan. 3 CHESS NIGHT 7:30 p.m.	Wed., Jan. 4 BINGO 8 p.m. \$1 a card	Thurs., Jan. 5 Duplicate Bridge 40c per person 7:30-10:45	Fri., Jan. 6 SOCIAL HOUR 5:15-6:45 p.m.	Sat., Jan. 7 JUKE BOX DANCE 9 p.m.-1
Sun., Jan. 8 Open	Mon., Jan. 9 Open	Tues., Jan. 10 CHESS NIGHT 7:30 p.m.	Wed., Jan. 11 Ladies Bridge 1:15 p.m.	Thurs., Jan. 12 Duplicate Bridge 40c per person 7:30-10:45	Fri., Jan. 13 SOCIAL HOUR 5:15-6:45 SQUARE DANCE 8-11:30	Sat., Jan. 14 JUKE BOX DANCE 9-1

## EVENTS

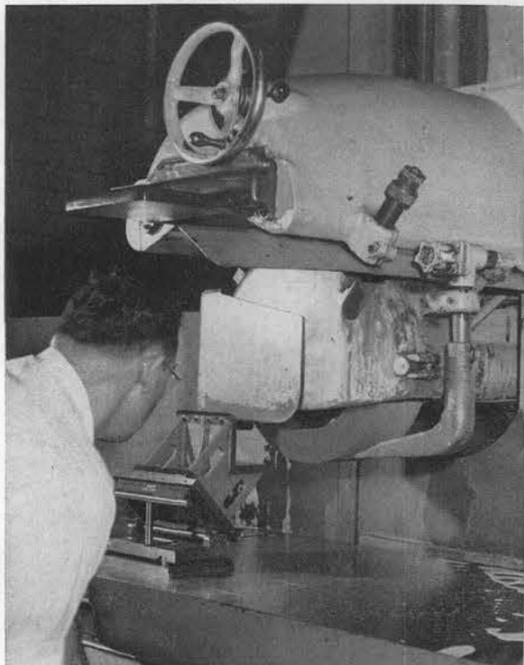


# A Million Years - - or More - - of Tools The Grinder The Lathe The Drill

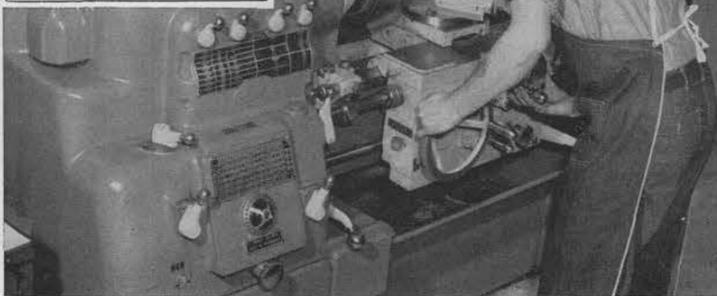


## "Civilization Through Tools"

Zachary Ortiz, 2152-2, model instrument maker, operates the machine which has helped shape the tools of modern industry. The lathe of today's machine shops is far removed from the shaping methods of man when he used his feet for propelling power.



Harold Cochrell, 2151-5, a grinder specialist, uses one of the machines of today which have made better living. The stone age man's primitive efforts were feeble and crude compared to the precision work of today's expert.



Lloyd Todd, 2152-2, a model instrument maker, works with a machine common to the precision shop of today. The ancient Egyptian craftsman of 5,000 years ago struggled with his crude drill to help produce the products of that day.

# Exhibit Shows Man's Progress in Machine Tools

About one million years ago a primitive man picked up a sharp bone to pierce an animal hide and, unwittingly, set the stage for his survival and our modern civilization 40,000 generations later.

Such prehistoric bone tools along with a rare assembly of tools from the Stone, Copper, Bronze and Iron Ages, and models of the first machine tools, are part of the traveling exhibit "Civilization Through Tools."

The exhibit will be shown at the Albuquerque High School at 4 p.m. and 7:30 p.m. Jan. 18 under the sponsorship of the Wilkie Foundation and the D-ALL Company of Des Plaines, Ill.

Display of the tools here is made possible by the Albuquerque Chapter of the American Society of Tool Engineers and the Albuquerque Section of the American Society of Mechanical Engineers.

Julian C. Moody, president of the local ASTE, and Robert W. Henderson, president of the local ASME, will speak at 7:30 p.m. the day the exhibit is here. Members of the New Mexico Council of Technical and Scientific Societies, their guests and local businessmen are invited to attend the evening session.

Nicholas Sannella, 5424, is chairman of the committee in charge of the exhibit and Don Bliss, 2533, is program chairman.

Typical of the many fascinating items in the exhibit are fossilized bone tools more than one million years old.

The exhibit is unique in that it presents many tools in chronological arrangement to show man's developing ingenuity.

Displayed next are crude stone implements having no recognizable shape but showing evidence of use and probably for every task at hand.

These are followed with stone implements which show evidence of being sharpened.

Modern civilization is introduced by displaying exact scale working models of the first "machine tools."

When the exhibit completes its showing in Albuquerque it will continue its travels across country showing to local engineering groups, engineering colleges and trade schools.

### Congratulations

BORN TO:

Mr. and Mrs. Richard D. Jones, 5112, a daughter, Ellen Katherine, Dec. 12.

Mr. and Mrs. Ernest Landavazo, 2417, a daughter, Kathryn, Dec. 8.

To Mr. and Mrs. Barcus A. Keller, 2411, a daughter, Teva Merlein, Nov. 17.

Mr. and Mrs. Don B. Browning, 5352-1, a son, Dec. 15.

Mr. and Mrs. Benjamin C. Benjamin, 5213, a son, Lee Noel, Dec. 13.

Mr. and Mrs. A. Nelson, 2231, a daughter, Karen Sue, Dec. 13.

Mr. and Mrs. K. G. Foster, 2232, a daughter, Carrie Lynn, Dec. 1.

### Coronado Club to Offer Square Dance Lessons

A new square dance instruction class for Coronado Club members begins the last week in January, according to Bob Parry, 1344. The classes are to be held at the Club each Tuesday evening from 8 to 10 p.m.

The series of 10 lessons will cost members \$6, Parry said. Reservations may be made by calling Parry or ext. 48142.

### Sympathy

To Zelma Beisinger, 5124, for the death of her mother, Dec. 18, in DeKalb, Missouri.

To Lester J. Brasher 1932-3, for the death of his father, Dec. 12, in Albuquerque.

### Promotions

HERBERT V. McNABNEY to supervisor of Fire and Safety Section 2482-2, Salton Sea Department.



In this capacity, Herb will serve as fire chief of Salton Sea, the position vacated by Joe Omlin who retired last month. Herb has been a fireman there since May, 1948.

working first for the Atomic Energy Commission until March, 1950, when Sandia Corporation assumed operation of the test base.

Earlier employment included two and one-half years as fire fighter at Torney General Hospital, Palm Springs, Calif., and five years as traffic supervisor with Los Angeles Railway. During four years in the U. S. Navy, he served aboard the U. S. S. Colorado.

### Rockhounds Elect

Merrill O. Murphy, 5443-2, has been elected president of the Albuquerque Rockhounds Club.

Merrill has been an amateur geologist and rockhound for more than four years. Elected secretary-treasurer was Esther Reich, AEC. The Albuquerque Rockhound Club meets first and third Tuesdays of each month at 7:30 p.m., at the University geology lecture hall.

### Wedding

Mr. and Mrs. Jerome Beckes are now at home at 4903 Marquette NE following their marriage Dec. 17 in La Mesa Presbyterian Church. The bride is the former Joyce Colvin, 2533-3, who has returned to work following a short honeymoon.

### Stamp of Approval

As a memento of his tour of duty at Sandia, and the "lasting impression" he made on his associates here, Walter A. MacNair was presented with a special branding iron at a farewell party Tuesday evening.

Supervisors in the 5000 organization presented the souvenir, formed by interlocking letters "W" and "M".

Mr. MacNair, formerly Vice President in charge of Research for Sandia, is now Vice President of Bell Telephone Laboratories.

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



CHRISTMAS PRIZE—John Bristol, 5532, center, was the lucky winner of the door prize at the 5500-5600 Christmas Party recently. Mary Pasko, 5512, presented the prize, and Joe Platt, 5521, approved.

### University To Issue Night Class Bulletin

Some 120 night credit courses will be offered when the University of New Mexico spring semester begins Feb. 6, 1956.

Registration will be held Feb. 3 and 4. Interested Sandians who plan to register should contact the director of admissions by telephone or letter, prior to registration.

The University's regular Evening Bulletin will be issued after Jan. 1, and will be available in the Employee Services office after that date.



ADDING UP contributions of money, food, clothing in the 1900 organization for the relief of Albuquerque indigent are Harvey Large, left, Jeanette Staggs, and Onie Perea, committee which supervised campaign.

## The Human Engineer's Task

## Give Man A Machine He Can Run

There's a group of mathematics students at the University of New Mexico acting as guinea pigs in a Sandia Corporation human engineering research project.

They're being seated before control panels of various design, told to operate the mechanisms.

They are asked: Can you read the dials easily? Can you move the equipment in the direction it should go? Are the controls awkward? Unhandy? Indistinguishable from one another?

Other students, their desks littered with yellow sheets of paper and pencil stubs, are solving one equation after another, hour after hour, day in, day out. They're striving to minimize computational errors.

This human engineering research, conducted by Herman Williams is testing the human factor, one of the most important elements in use of nuclear weapons in the field.

## Machine Complexity

When a machine becomes so complex that few individuals can operate it with ease and accuracy it's time to consult the human engineer.

Herman Williams, a human engineer in Sandia Corporation's Experimental Weapons Research Department, works to prevent these machines—or weapons—from having their usefulness limited by man's inability to cope with their complexities.

Human engineering, Williams says, attempts to bridge the gap between man's physical and psychological capacities, and the demands of his machines and equipment.

A comparatively new field of applied science, it emerged from problems encountered during the massive production efforts of World War II, when weapons and machines did not do what they were supposed to do because they were limited by the human beings who operated them.

Armored car drivers broke under the incessant pounding of cannon carried in their vehicles. Sailors became irascible, made fatal mistakes when assigned to sonar duty for long stretches at time. Machinists blew up on assembly lines, refused to turn out much-needed dies.

"It's too noisy in here," they complained.

## New Science

Before World War II machines



READABLE DIALS were designed by Sandia's human engineer, Herman Williams, left, for a research project headed by Bob Fox, 5352. Dials are easily set, easily read, do away with cumbersome indicators.

made demands upon the human system. But the discomfort and inconvenience could be tolerated. Man could adjust to the machine; could exert himself to work effectively because machines were comparatively simple.

Then weapons began to outrace man's responses. Banks of dials, control panels, test set consoles were piled one upon the other; machines became increasingly complex.

The human nervous system found it more difficult to tolerate the strain. And human engineering began its rapid growth in the Atomic Age.

Herman Williams and Purdy Meigs—two of Sandia's human engineering staff—say that human engineering has accompanied the Laboratory's rapid advances in the nuclear weapons field. "If the field operator's skills and capacities were not taken into consideration," Herman feels, "weapon design might advance but weapon usefulness would be questionable."

Sandia's human engineers have assisted design engineers in improving performance, reducing training costs, and improving manpower utilization. Together, they have simplified weapons and their accompanying handling and test equipment.

Dials with pointed needles have been changed to odometer-type mechanisms. Equipment labels have been changed to meaningful one-syllable words, and painted with luminous paint for night-time use. Check out routines have been streamlined for easy understanding. All

of this aimed at decreasing human error, human exhaustion, the human proneness to make a mistake.

## Science—Psychology

As a new science—some say, a new art—human engineering is a composite of engineering science and psychology.

As long ago as 1860, G. T. Fechner, a German philosopher and physicist, proposed the new science of psychophysics, in which—Fechner said—man had established a quantitative relationship between his physical world and the psychological world. Man—Fechner believed—is the determiner of his environment.

Fundamentally, these hundred-year old precepts of the German scientist, Fechner, are valid today: The best machine is one tailored to man's inherent capacities. In the past engineers sometimes designed a device which only they, or a highly trained expert, could operate.

## Everyone Not Expert

They forgot that out in the field their new machine would be used by a man who was not an electronic expert or a radar authority.

Thus the B-24 bomber pilot had 60 controls to ponder before each takeoff. A sailor had to manually check position, range and azimuth heading of his sonar "ping." The anti-aircraft gunner pushed pedals with his feet, sighted with his eyes, rotated wheels with his hands, shouted orders through a throat microphone.

Each of these men at one time or another found himself bending to the will of his machine.

Williams believes, and the human engineering science believes, that the operator must be considered today more than ever for the technology of industry—and war—is steadily becoming more and more complex.

"In this way," says Human Engineer Williams, "we can obtain the best that man and machine can offer."

## Club to Present Latin American Dance Lessons

Latin-American dance classes for Coronado Club members will be held at the Club each Monday night, beginning Jan. 16. Separate classes for beginners and advanced students will be arranged.

Registration for the classes, which will be limited to 15 couples for each course, will be held Jan. 2 through Jan. 14. The series of 10 lessons will cost \$6 per person.

Instructing the Beginners' Class at 7 p.m. to 8:30 each Monday will be Gail Ward, 2463. Justin Heinman, 1723, will teach Advanced Classes at 8:30 to 10.

## G. I. News—

## From Sandians in The Armed Forces

Word has been received that Robert J. Burnett, on leave from 1513, is now at Fort George G. Meade in Maryland. He was formerly an instructor at Fort Benning, Ga. His mailing address is:

Pfc. Robert J. Burnett  
US 55012857  
2191 S.U. F.D.T.D.  
Fort George G. Meade, Md.

Pvt. Charles G. Sain, on military leave from 5513, expects to be stationed permanently at Fort Lee, Va., until his discharge in Jan., 1957. Charley is a draftsman in the Quartermaster School Regiment. He was married Nov. 5 in St. Louis, Mo., to Mary Agnes Shults. After a brief honeymoon, which was spent moving to Virginia.

Recently promoted to Lieutenant j.g. is Raymond W. Marshall, who is now stationed at NAAS Brown Field, Chula Vista, Calif. Ray was an electrical engineer in 1321 before entering service in February, 1954. He expects to be released from duty in June, 1957. His address is:

Lt. j.g. Raymond W. Marshall  
289 Beech Avenue, Apartment 1  
Chula Vista, Calif.

Roy C. Myers, Jr., formerly of 5220, has graduated from Officer Candidate School and is now assigned to the Bureau of Ships Laboratory in Brooklyn, N. Y. His address:

Roy C. Myers, Jr., Lt. j.g., USNR  
c/o Commander, N. Y. Naval Shipyard  
Brooklyn 1, N. Y.

Airman 3/CI John T. Hainlen, formerly of 3122, paid a short visit to the Sandia Lab News office this week. He is now stationed at Chanute Field, Rantoul, Illinois. He will shortly begin training as an aircraft mechanic, and hopes to complete his present assignment in May, 1956. He will be assigned to overseas duty later.

John's present address:  
A 3/CI John T. Hainlen  
3353 Student Squadron  
P. O. Box 1283  
Chanute AFB  
Rantoul, Illinois

SP3 Harold C. Psillas, formerly of 5511, writes that he is in the Technical Support section of the Pictorial Division at White Sands Proving Ground. He says, "I work under an optical physicist and have been working on a Disney-like production camera for which I had to design an electro-mechanical pulsing device."

A new mailing address has been received from 2nd Lt. Gerald B. Kliman, formerly of 5413:

2nd Lt. Gerald B. Kliman  
AO 3047862  
Box 1351  
3401st Student Sqdn. (0)  
Keesler AFB, Miss.

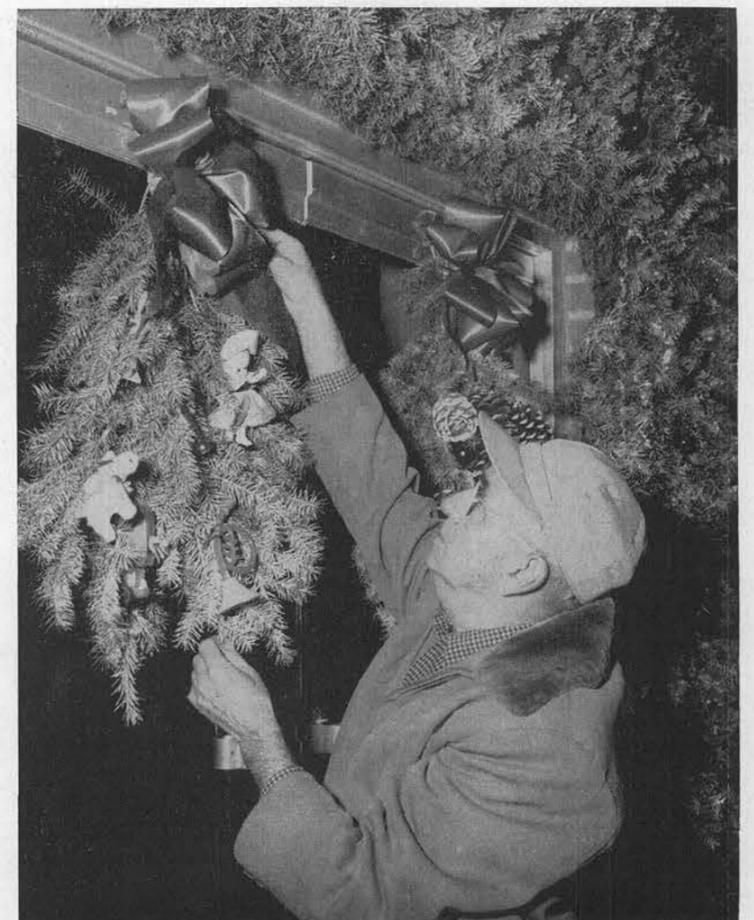
Ben J. Petterson, 5223, previously stationed in Marianna, Fla., is now in San Antonio, Tex.:

A/3 Ben J. Petterson AF 18447940  
618 Curtis Ave.  
San Antonio 4, Tex.

## A. B. Metzger Speaks to AIEE on Shock Effects

A. Burton Metzger, Sandia's assurance director, will address a meeting of the Northern New Mexico section of the American Institute of Electrical Engineers on Jan. 10 at 7:30 p.m. The meeting will be in the new Electrical Engineering building on the University campus.

Mr. Metzger's topic will be "Physical Effects of Electrical Shock."



VETERAN DECORATOR—Matt Ungermann, 2223, and his wife have undertaken the task of arranging greens and bows for a proper Christmas effect on the front of Bldg. 800 for the past several years. Here's Matt performing his 1955 chore.



UNIVERSITY PSYCHOLOGISTS run through controlled experiments with banks of dials, seeking out the psychological factors of weapons controls for Sandia's human engineering experts.

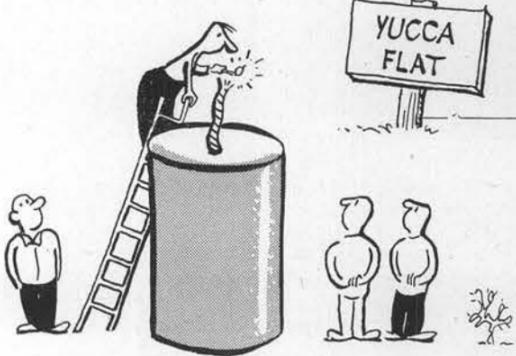
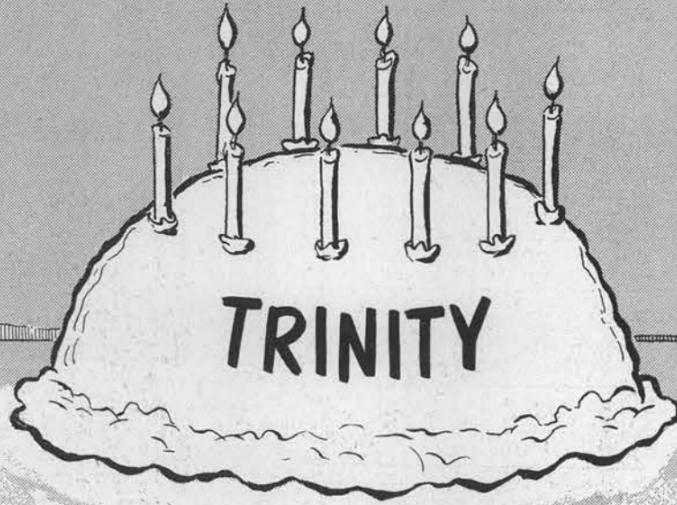
# Sandia HI-LIGHTS OF 1955

On July 16, 1955 the world observed the tenth anniversary of the first atomic explosion.

## NATIONAL ENGINEERING WEEK

February  
20-26

AMERICA  
NEEDS  
MORE  
ENGINEERS!



Sandia Corporation personnel participate in atomic tests at AEC's Nevada testing site.

### NEW HOSPITAL PLAN

Sandians were introduced to a new and improved Hospital Plan this year. They also took comfort in having a safe place to work. The Corporation was given its fourth consecutive National Safety Award.



MARKER

### "SCIENCE IN ACTION"

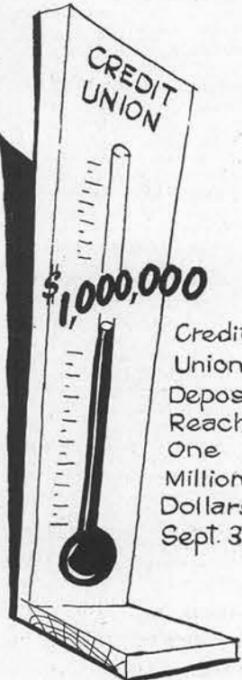


OSBORNE

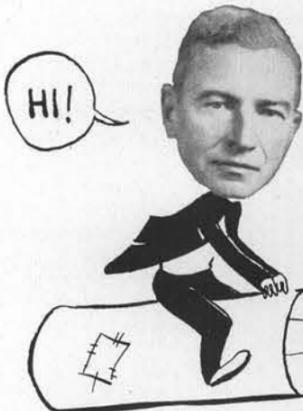


ELLETT

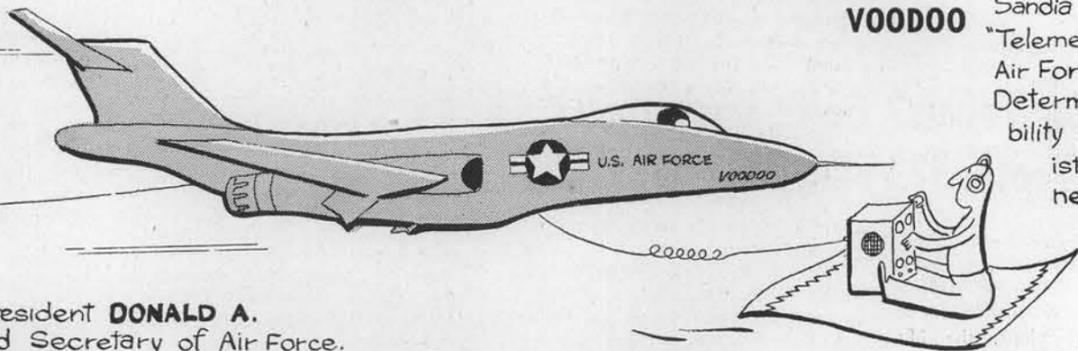
Three Sandia Engineers, Thomas Marker, Carroll V. Osborne and D. Maxwell Ellett, are granted patents on inventions they developed while working for the Corporation.



Credit Union Deposits Reach One Million Dollars Sept. 30.



Former Sandia President **DONALD A. QUARLES** is named Secretary of Air Force.



**VOODOO** Sandia Experts "Telemeter" the Air Force "VOODOO," Determining Stability Characteristics of the new Plane.

### BEST REPORTER

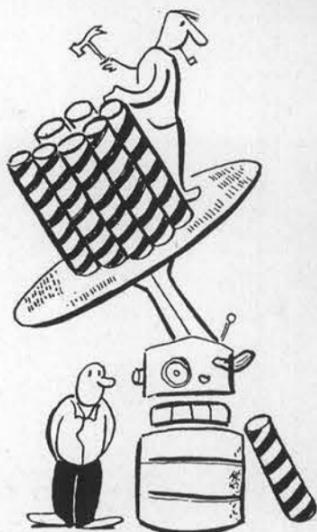
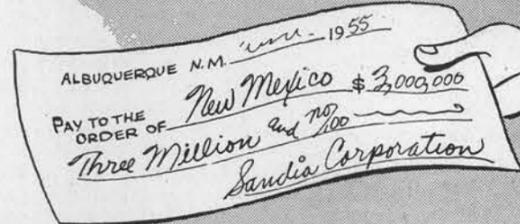
Urcel "Spike" Coombe wins Sandia Lab News Best Reporter Award.



COOMBE

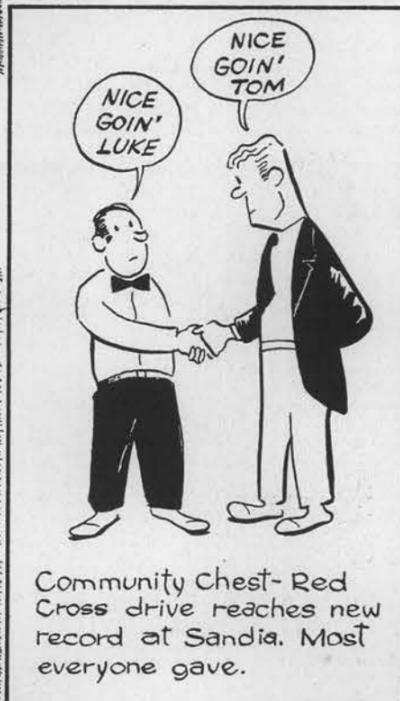
### BIG SPENDER

Sandia President **JAMES W. McRAE** told an Albuquerque Lions Club gathering that Corporation purchases in New Mexico reached three million dollars the past year.



### APOTA

SC Engineers Develop "APOTA" (Automatic Positioning of Telemetering Antenna). APOTA tracks falling test weapons and records vital information. APOTA was designed and built at Sandia Lab.



Community Chest-Red Cross drive reaches new record at Sandia. Most everyone gave.

### TEN-YEAR VETERAN

Sandia's new Service Recognition Plan will reward **Bill Caldes** with a ten-year pin. Bill has the longest service record in the Corporation.

CALDES



Kinney

# shopping center

## CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication.

### 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

Next Deadline: Noon, Jan. 6

## FOR SALE—

1953 DODGE MEADOWBROOK sedan, 4-door, R&H, \$1050. Kasper, ext. 47287.

DOUBLE ROLL-AWAY bed, innerspring mattress, cover, \$25, or trade for good single Hollywood bed. Sherwin, Alb. 5-8866.

DOUBLE BED & spring, \$5; Baby-Tenda, \$3; folding baby buggy, \$6; Stenotype machine & case, \$25. Schiess, Alb. 5-3252.

2-BR HOUSE, unfurnished, wall, carport, close to bases at 840 Madeira SE or will rent for \$82.50 mo. Black, Alb. 5-8326.

BENDIX Automatic washer, \$35. Johnson, Alb. 5-5427.

MOTOR SCOOTER, 1954 Cushman Eagle, 5 hp., 2 gears, Carpenter, 5405 Summer NE., Alb. 5-6925.

'55 FORD FAIRLANE, 6000 miles, completely equipped, \$200 or older car for equity. Lewis, Alb. 5-4457.

MEISSNER 2-CW novice transmitter, complete with tubes and crystal, \$12. Drake, ext. 40232.

1952 PONTIAC CHIEFTAIN DeLuxe, cash or terms, or trade on equity for 2-BR house. Jones, Alb. 5-3390.

HAMMARLUND 4-20 Transmitter, and 4-11 Modulator, small Johnson Sea Horse outboard motor. Tilley, Alb. 5-4384.

1950 PLYMOUTH Tudor, R&H, \$345. Shaw, Alb. 5-1576.

2-BR HOME, carpeted, walls, lawn, sprinklers, 12x22 den, 2 fireplaces, immediate possession, large loan, Gillespie, 412 Aliso NE, Alb. 5-6421, after 5:30 p.m.

OR TRADE, twin beds, and double bed with mattress and springs, \$25. each. Dresser with large mirror, \$15. Silva, 307 Rio Grande SW, Alb. 2-1419.

4-BR HOME, Snow Heights No. 1, walls, sprinklers, close to Base, 4th house west of Wyoming on Hannett. Henderson, Alb. 9-2037.

OR TRADE, 2-br house, near University, \$8000. Samuelson, Alb. 5-8243.

1951 STUDEBAKER V-8, 4-door sedan, \$325. Alvarez, Alb. 2-3821.

CHECK WRITER, \$25. Mann, ext. 27142

TYPEWRITER, L. C. Smith Standard, \$35. Sirwinski, ext. 3-6161.

BC348R communications receiver, 110-volts, 200 KC-18 mc; \$60; Delta 8 inch tilting table saw with motor, metal stand, \$40. McClure, Alb. 6-6354.

PLATFORM ROCKER, matching ottoman, dark green plastic, good condition, \$35. Sherwin, Alb. 5-8866.

## WANTED—

RIDE from 4903 Marquette NE to Bldg. 892 vicinity. Joyce Beckes, ext. 33159.

TO JOIN car pool from Candelaria and San Mateo to Bldg. 802. Bob Ezell, ext. 23137.

RIDERS from vicinity of Foothill Road, via Broadway to Sandia Base. Granville Mann, ext. 24239.

RIDE from 2125 LaVeta NE to Personnel Building. Richard Olive, ext. 25255.

RIDE or join car pool from vicinity Constitution & Bryn Mawr NE to Bldg. 880. Dottie Wright, Alb. 6-1820.

RIDE or join car pool from Columbia and Garfield SE to Bldg. 894 vicinity. Marion Walker, ext. 49163.

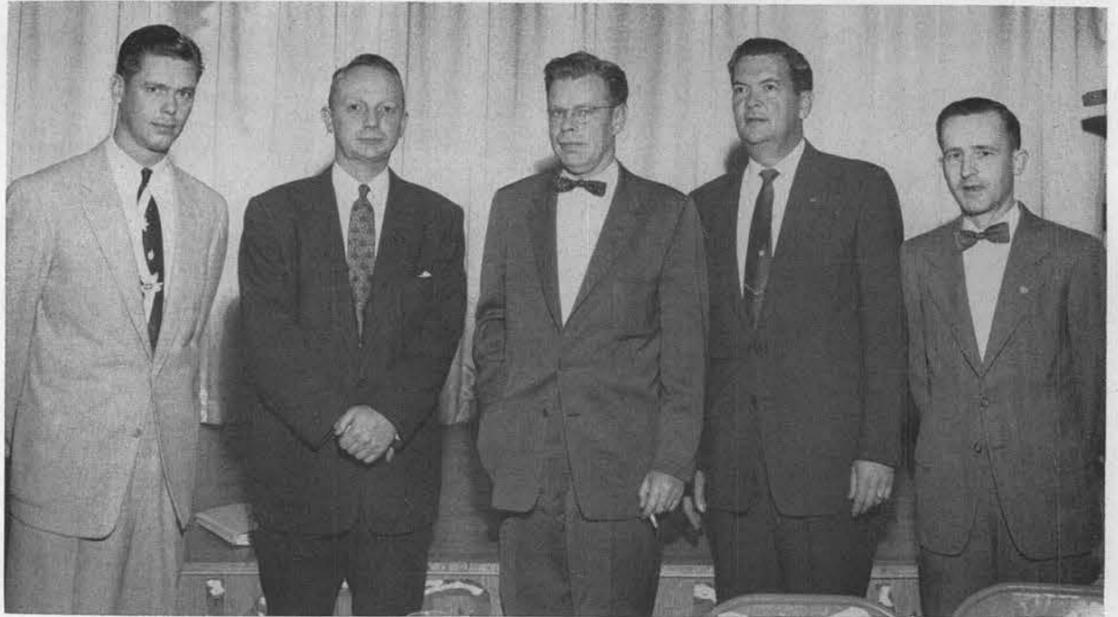
RIDE or join car pool from 313 Mesilla NE to Bldg. 887. Barcus Keller, Alb. 5-9805.

## TRADE—

TIRE CHAINS, size 6:00-16, and 6:70-15 for tire chains to fit 7:10-15 tires. Zickert, Alb. 4-3926.

## FOUND—

CHILD'S shoe ice skate. Call ext. 27160.



OFFICIALS of ASM and ASTE who assembled to welcome William J. Jackel, second from left, at a joint meeting of the two organizations included: Keith Mead, chairman of the American Society for Metals, Mr. Jackel, James W. McRae, Sandia Corporation president, Bob Lemm, ASM program chairman, and Joe Moody, chairman of the American Society of Tool Engineers.

## Bowling Ball Top Prize for Tourney Beginning Jan. 28

A new bowling ball is first prize for all events in the big Coronado Club men's bowling tournament, which begins Jan. 28. The prizes were donated by the Brunswick-Balke-Callender Company.

Entries for singles, doubles, and teams must be submitted by 5 p.m., Jan. 16. Averages used in the tourney will be compiled as of Jan. 13. Highest averages rolled in any local league must be used. A placement prize will be paid on each ten entries.

Entry blanks are available from all league secretaries, from Ronnie Heuer, AEC, or Charles Kasper, 3153.

## Sandia Employees Invited to Work With Boy Scouts

The Boy Scouts of America is urgently in need of capable men to serve as Neighborhood Commissioners in Sandia District.

The Neighborhood Commissioner functions as a liaison between the Scout executive personnel, and the operating units: Cub Packs, Scout Troops, Explorer Posts.

Sandians and others desiring to serve their community in the vital Scout program are asked to contact Malcolm H. Groll, 4113, Assistant District Commissioner, 828 Truman Street NE, Alb. 5-9638.

## Article Published

An article written by Jack K. Hale, a mathematician in Organization 5122, appears in a recent issue of the Review of Mathematics, published by the University of Parma, Italy.

Hale's article: "Periodic Solutions of Non-Linear Systems of Differential Equations," is his fourth appearance in the same magazine.

Hale is a graduate of Purdue University, holds the Ph.D. degree in mathematics awarded in 1953. He is married, and resides at 4209 Shephard NE.

He has been a Sandia Corporation employee since July, 1954.



BRIAN EWARD, son of Patty and Frank Duggin, Jr., 2331-3, enjoys a sunny day at his home in San Gabriel, Calif.

## Hoe-Down Extraordinary At Coronado Club Jan. 15

World-famed "Grand Ole Opry," with its roster of singers, yodelers and entertainers makes a one-night stand at the Coronado Club Jan. 15, from 8 p.m. to 12, according to Martha Howard, Club entertainment director.

Appearing here direct from the stage of Radio Station WSM, Nashville, Tenn., will be Sherman Collins, Smiley Wilson, Kitty Carson, and Cousin Jody and his Country Cousins. The featured singers and entertainers will play for square and round dancing, and stage an elaborate floor show.

Prices for Coronado Club members are \$1.10 per person including tax; for guests, \$1.65 each. Tickets will be available after Jan. 2.

## Tech-Scientific Council Retains Legal Advisor

Silas B. Henry, Albuquerque attorney, has been appointed legal advisor to the New Mexico Council of Technical and Scientific Societies, according to Nick Sannella, 5424, president.

Mr. Henry will be available to all member societies on a consultant basis as a Council service.

## ASM-ASTE Members Hear Discussion of Geneva Conference

Some 175 members and guests of the Albuquerque chapter of the American Society for Metals, and the American Society of Tool Engineers attended a dinner meeting Dec. 20 to hear William J. Jackel, vice-president of ACF Industries' nuclear energy products division.

Technical chairman of the meeting was James McRae, president of the Sandia Corporation, who introduced the speaker.

Mr. Jackel discussed various aspects of the United Nations conference on the peace-time uses of atomic energy held at Geneva, Switzerland, and showed color slides of Geneva, and environs. He also presented some figures on the progress toward peace-time utilization of atomic power in England, Russia and Canada.

## Directors Meet

The board of directors of the New Mexico Council of Technical and Scientific Societies meets Jan. 9 at 7:30 p.m., in the University of New Mexico warehouse building.

Final arrangements for the forthcoming "Civilization through Tools" exhibit to be staged by the Council will be discussed.

Schedule Sandia Corporation Employees Basketball Ass'n.		
Dec. 30 - Jan. 13		
Tues., Jan. 3		
Time	Org.	Org.
6:30	5500	vs. 2300
7:30	2200	vs. 4100
8:30	5300	vs. 1600 (Team 2)
Wed., Jan. 4		
6:30	1700	vs. 2400 (Team 1)
7:30	5200	vs. 2500-3100
8:30	2100	vs. 1600 (Team 1)
Thurs., Jan. 5		
6:30	1300	vs. 5300
7:30	2400 (Team 2)	vs. 1600 (Team 2)
8:30	5400	vs. 2700-5100-AEC
Mon., Jan. 9		
6:30	5200	vs. 1600 (Team 1)
7:30	5500	vs. 2400 (Team 1)
8:30	2100	vs. 2300
Tues., Jan. 10		
6:30	2200	vs. 4100
7:30	1700	vs. 1200
8:30	1900	vs. 27-5100-AEC
Wed., Jan. 11		
6:30	5500	vs. 2400 (Team 2)
7:30	5400	vs. 5300
8:30	1300	vs. 2500-3100
Thurs., Jan. 12		
6:30	1700	vs. 4100
7:30	5200	vs. 2300
8:30	2100	vs. 1600 (Team 2)

## Hal Cushman's Ready—

# Anyone for Tennis? Golf? Basketball? Softball? Football? Volleyball? Handball?

Although he has been an athlete most of his life, the biggest sports thrill for Hal Cushman came just a few weeks ago when he traveled with the regional champions, the McCallister Softball team of Albuquerque, to Clearwater, Fla., to participate in the World Tournament of the Amateur Softball Association.

Despite errorless ball on both teams, Cushman's outfit lost its first game, 1-0, to a Bloomington, Ind., aggregation. There were only two hits in the game. Later the Albuquerqueans were eliminated by a Houston, Tex., team, 5-4, after leading for six full innings. In both games, Hal says, there were only five hits; one of them was Hal's.

An electrical engineer in 2552, Hal Cushman has pursued some form of team sports activity since he was six

years old. He is still playing the game today.

Hal stands six feet even, weighs 210 pounds. He has had a husky build most of his life; he weighed 180 in high school where he began participating in varsity and sand-lot sports.

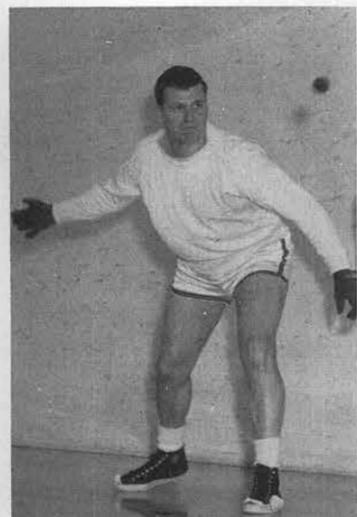
Since high school, whenever he's had a chance, he's kept in condition with basketball, tennis, softball, volleyball, touch and tackle football, handball, golf.

He continued this trying pace during his college years; he won four varsity letters at Bradford-Durfee Technical Institute. In all of these sports, he's won Sandia Corporation championships, presently stands at the top of the Employees Association handball ladder.

What got him started in his life-long tourney of sport? He says maybe his Dad showed him the way. His Dad was a semi-pro catcher in Rhode Island State leagues.



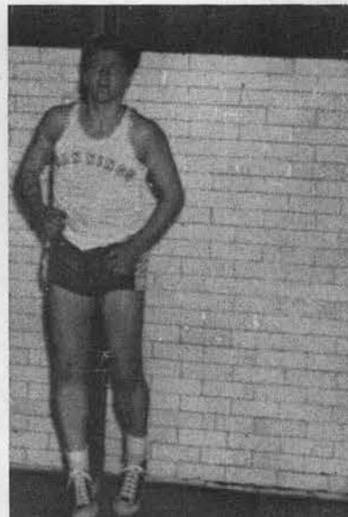
Tennis at Bradford-Durfee Institute



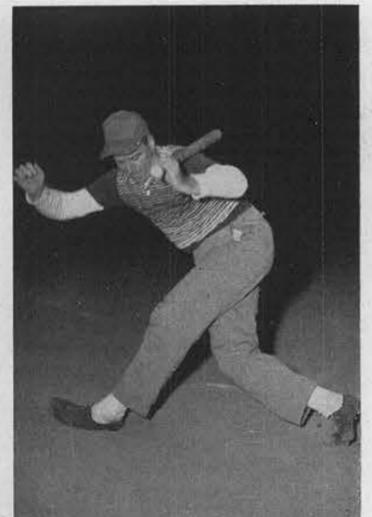
Handball at Sandia



Softball in Albuquerque



Basketball at Fall River, Mass.



Softball at Sandia