



JUDY ROACH, Miss Livermore 1961, receives her crown from Pamela Pearson who was Miss Livermore during the year 1960.

Judy Roach Selected by Judges As 'Miss Livermore'; Crowned by Sandian

When Livermore Laboratory's Judy Roach (8161-1) was crowned "Miss Livermore" in recent ceremonies, two other Sandians were mighty proud. The reigning queen is the daughter of John Roach (8234-2) and Bess Roach (8232-1). Judy, chosen over 13 contestants, will reign at Livermore civic functions for a year. She will also compete for the title of "Maid of Alameda County" at the Alameda

County Fair the end of June.

Dick Lassen (8232-2) served as chairman of the contest committee. He selected judges from the Bay Area, including the head of a modeling agency in Oakland.

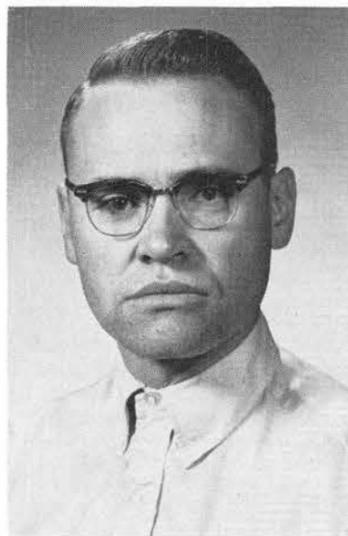
Judy received her crown from last year's "Miss Livermore," Pamela Pearson, daughter of Bud Pearson (8222-2).

Kent H. Jones Earns PhD From University

Kent H. Jones (5432-1) was awarded his PhD degree in physical chemistry during commencement exercises at the University of New Mexico this week.

He previously received his BS degree in chemistry at UNM in 1949. The thesis for his doctoral degree was entitled "The Chemical Behavior of Carrier Free Antimony 125."

Mr. Jones has been at Sandia Laboratory since March 1960 working in the Radiation Effects Studies and Measurements Section.



Mr. Jones

It's known as 'zero g'

Components Receive Tests in Area III Under True Weightless Environment

As a fast elevator drops from the 40th floor to the basement, people inside experience a giddy feeling of semi-weightlessness. In Sandia Laboratory's Area III a clever arrangement of a 300-ft. tube, a 1000-cu. ft. vacuum tank, and a turbo-blower has achieved the real thing—true weightlessness or "zero g."

Weightlessness occurs during the flight of a missile when it reaches peak altitude and noses over for the descent to earth. Zero gravity is also a condition in an orbital satellite or a deep space probe.

Sandia's Zero G facility in Area III can give a component weightlessness for four consecutive seconds and then for several additional periods of decreasing duration. Similar to the elevator plunge, the component is dropped in a special instrumentation package down the length of the tube which is supported by Sandia's 300-ft. drop tower.

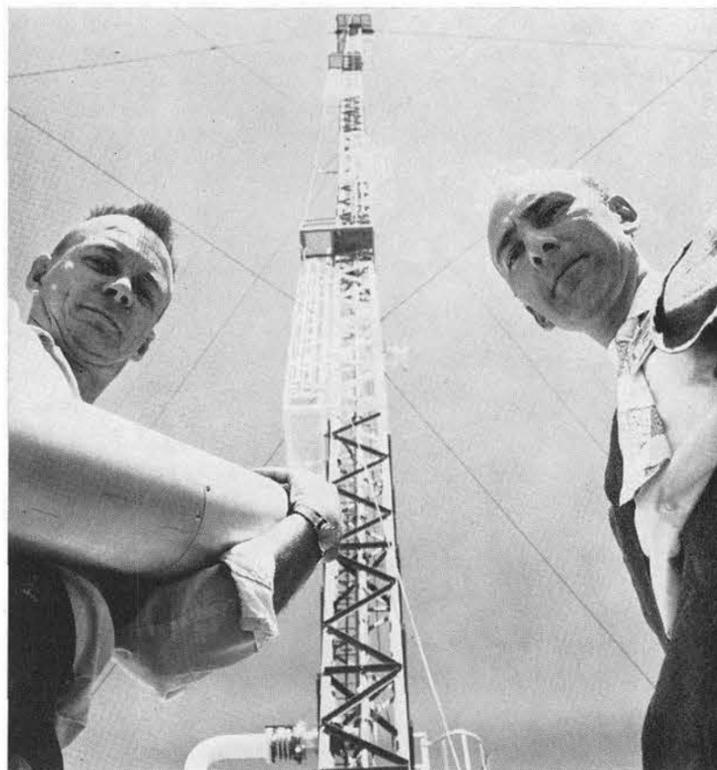
32 ft. Per Second

Pressure inside the tube has been reduced by the turbo-blower to the point where atmospheric pressure from the top of the tube will force the package down at a rate of 32 ft. per second increasing by 32 ft. each additional second.

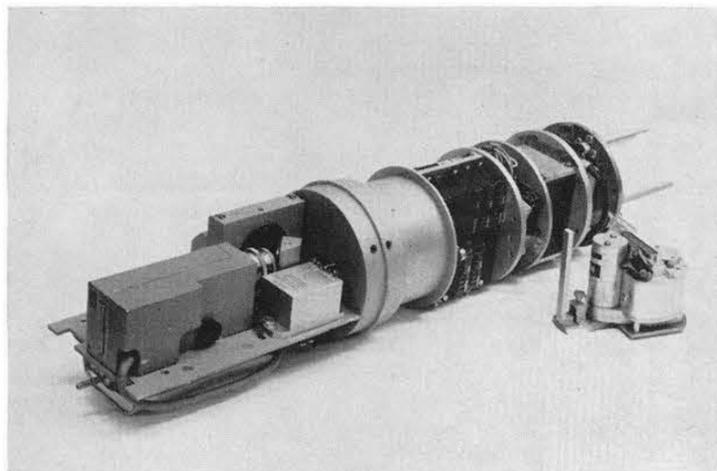
This means that all forces acting upon the package have been equalized. Inside, the component is experiencing free-fall weightlessness.

Thirty feet from the bottom of the tube is a "tee" connection opening into the 1000 cu. ft. tank. Once the package passes this point, air quickly builds up and compresses in front of it. Bouncing on this cushion of air, the package shoots back up the tube, once again achieving zero g and maintaining the rate during the ascent, the changeover into descent, during descent, and

(Continued on Page Five)



IN AREA III, designer Marcel Reynolds (right) and Sid Cook stand in front of 300-ft. drop tower which supports Zero G facility tube inside the structure. Instrumentation package which Sid holds is dropped down the tube during tests. "Tee" connection from tube leads to 1000 cu. ft. vacuum tank and turbo blower.



COMPACT INSTRUMENTATION PACKAGE for the Zero G facility is 32 inches long, five and one half inches in diameter, and weighs 35 lbs. Left is 16-mm movie camera. Right is tape recorder.

Device at Livermore Permits Taking Pictures 'Inside' HE Detonations

Testing of high explosive detonators and other explosive-actuated devices is being conducted at Livermore Laboratory inside a specially-constructed tank recently installed at Area 8. The facility went into operation June 5.

The 80,000 pound tank can contain detonations of as much as five pounds of explosives, although there are no plans to detonate charges weighing over one pound. Specifications for the tank, drawn up by Harry Jacobs (8121-2), call for walls made of one-inch steel plate, and special baffling to muffle the noise and ground shock explosions.

The charges will be detonated electrically by remote control from a nearby instrumentation trailer. Special high speed cameras and oscilloscopes will record test data.

Visual data will be collected by a framing camera, operating at speeds up to 2.5 million frames per

second, streak cameras, and conventional high speed motion picture equipment.

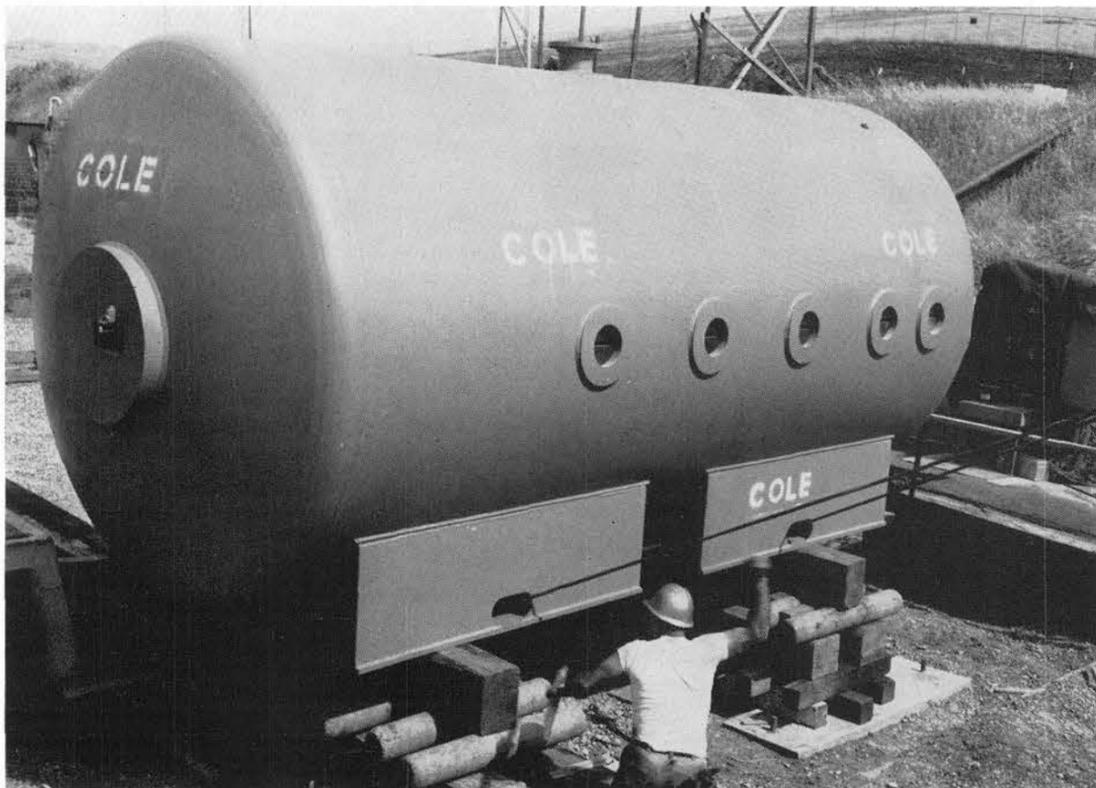
The camera will film detonations through a specially-constructed window in the tank, which is covered with four-inch bullet-proof glass.

Oscilloscopes will record the output of explosives transducers used in the tests.

One special feature will be a three-channel pulse X-ray machine which will shoot pictures of the "heart" of the explosion before the explosive's container is ruptured.

A 240 square foot metal building will be installed at the north end of the tank to house the cameras and X-ray equipment.

The Environmental Test Division, headed by R. A. Baroody (8121), will operate the new test facility. Project divisions 8124, 8125 and 8126 will schedule the explosive tests.



FIRING CHAMBER for explosive studies at Livermore Laboratory is unloaded at Area 8. The 80,000 pound tank went into operation this month for

testing detonators and other explosive-actuated devices. The tank was designed to eliminate objectionable noise and ground shock in the area.

Editorial Comment

What Kind of Freedom?

All the worry about security infractions may on the surface appear to be merely for the sake of maintaining a good security record. Some of us could be getting the impression that all we want is a record which produces nods of approval and perhaps a "well done."

This is not the case.

The record in itself is important, be it good or bad. But the implications of poor security performance are far more serious than we might like to think.

Sometimes, in our campaign against Communism, we get a bit confused as to what we are for. It is not sufficient to say that we are for freedom because the U.S.S.R., as the sponsor of world communism, lays claim to the cause of freedom. Theirs, according to Red propaganda, is true freedom. Our brand of freedom is merely a tricky utility of the capitalistic system, according to today's Red leaders.

Their claim cannot be ignored, because they are telling it with marked success to the communist controlled one-third of the world population — and to millions more who are on the verge of falling into the communistic sphere.

So, when we are preaching security at Sandia as one step in the battle against communism it is well to remember the kind of "freedom" we are championing. When we do, it makes the sacrifices of security worth-while.

The Free World brand of freedom (as opposed to "Brand X" of the Soviets) includes those political institutions found in the United States and some other countries. The list is familiar to every student.

- Freedom of speech and thought
- Freedom of worship
- Freedom of assembly
- Ownership and disposal of private property
- Habeas corpus (Safeguards against illegal detention or imprisonment)
- The jury system
- The private ballot
- The rule of people by majority
- The protection of minorities

These are the political systems flouted by the Soviet type of "freedom." Not one of them survives in a country under the Soviet sphere.

Thinking of these makes the efforts to preserve our system no longer a burden, but a privilege.



HOME GROWN STATUE: This rugged countenance, reminiscent of an Easter Island idol, was hand-hewn from a native California redwood log by Dick Finn (8114-2), right, and Jim Trantham (8114-3). The five-foot statue was a birthday gift to Jim's mother.

Coronado Club Members To Enjoy 'Night On Broadway' Plus Dancing

"A Night on Broadway" will be the theme of the Coronado Club's monthly buffet dinner-dance Saturday, June 17. Hit songs from popular Broadway productions will be sung by three vocalists, all with stage experience in musicals.

The buffet is from 6 to 8 p.m.; entertainment starts at 8:15, followed by dancing from 9 to 1 to the music of Paul Muench.

Tickets cost \$2.60 for members and \$3.60 for guests. Reservations should be made at the club office by June 14.

All club members are invited to a free graduation ball for dance class students. The recorded music dance will be held from 9 to 12:30 Saturday, June 10.

The Four Brothers will play during social hour and the buffet to-

night. Next Friday night, June 16, Dick Bills' western-style music will be featured. Social hour is from 4:45 to 6:15, and the \$1.75 buffet is served from 6 to 7:30.

Sympathy

To N. J. Eich (1111) for the death of his mother May 10 in New Jersey.

To C. A. Sandoval (1111-1) for the death of his father-in-law May 25 in Hatch, N. M.

To Ed Holbrook (8123-2) for the death of his father-in-law May 12 in Orchard, Neb.

To Paul A. Abrams (4111-2) for the death of his mother May 15 in Detroit, Mich.

Sandians Appointed To State Boards By Governor

Sheldon P. Bliss, MD, (3300) and Charles L. Hines (3341-1) were recently appointed to state boards by Gov. Edwin L. Mechem.

Dr. Bliss will serve on the board of the Los Lunas Hospital and Training School until Jan. 1, 1963.

Mr. Hines will attend his first meeting of the State Health Board in July.

Attend Library Meet

Ida Gutierrez, Frances Strachwitz and Bill Richardson (all 3421-1) attended the annual meeting of the Special Libraries Association, held in San Francisco May 28-June 1.

Bill is the immediate past president of the Rio Grande Chapter of Special Libraries and Ida is the newly-elected vice president of the chapter.

Liz Kennedy (8233-2) served as local hospitality chairman for the Military Librarian Division of the Special Libraries Association meeting. Liz is librarian in the Technical Library Section at Livermore Laboratory.

Toastmasters Invite

Manzano Toastmasters Club invites all interested persons to attend a dinner meeting for potential members at the Coronado Club June 14 at 6:45 p.m.

For further information call C. F. Martin (5432), ext. 46273 or 255-8030.

Elected PTA Officers

Guy Willis (8126-1) and his wife Dotti were elected co-presidents and Harold A. Peterson (8222-2) and his wife Lucille were elected co-vice presidents of the Junction Avenue PTA in Livermore recently. The husband and wife teams were installed at a meeting last month.

Classified Chords Sing

Livermore Laboratory's choral group, the Classified Chords, presented a noon-hour program for the Livermore Rotary Club May 24.

Under the direction of Ellen Cunningham (8233-2), the group sang nine selections.

Table Tennis Winner

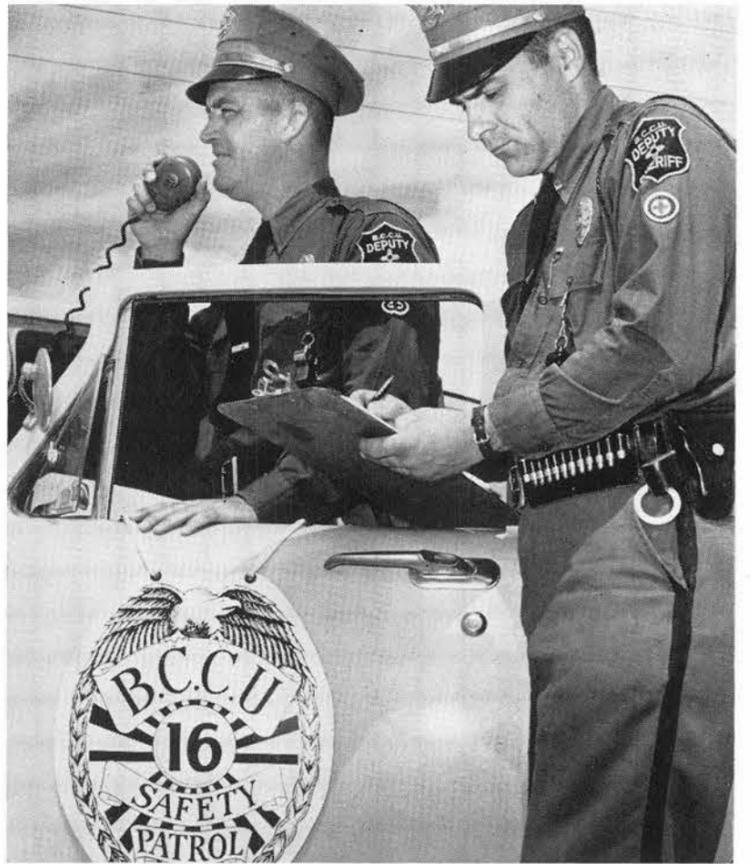
"Syl" Grisby (8233-4) won the first place trophy in the Livermore Laboratory singles table tennis tournament which ended in May. Second place winner was Don Werner (8124-2). Twenty-four contestants competed in the tournament.



Virginia Shortt (2563-2)

Take a Memo, Please

ACCIDENTAL INJURIES are easy to incur, and even a slight accident can cause pain.



VOLUNTEER SAFETY patrolmen, Wes Johnson (4623), right, and Dean Snyder (4231), cruise highways on weekends and holidays as members of the Bernalillo Citizen's Unit radio division.

Sandians Who Serve

Sandians in Citizen's Unit Help Maintain Safety On State's Roads

This is another in a series of articles describing the community activities of Sandia employees.

A driver of a speeding car acts as though Highway 66 is Indianapolis Speedway. Sirens wail, red lights flash, and a member of the Bernalillo County Citizens' Unit stops another traffic violator.

After the offender pulls over to the side, the volunteer citizen radios the State Highway Patrol, and soon a policeman arrives to take necessary action.

Several Sandians are members of the radio division of this citizen's group. They are Wes Johnson (4623), Dean Snyder (4231), Bob Hoffert (4253), Bill Treharn (4512), Howard Sloane (2413) and Rex Rozelle (4254). George Revels (4623) often works with the men, although he is not a member of the radio division.

All work is voluntary, and the men furnish their own cars, radio equipment, and gasoline. They wear uniforms and have shields for their cars which are similar to the ones on state police cars.

During Memorial Day weekend six mobile units, out of the 20 available, were out on highways. "We watch for high speeders and careless or drunk drivers," says Dean Snyder, a lieutenant in the radio division. "Actually, just the presence of our cars on the road helps slow down traffic."

The men receive training in first aid, traffic investigation, and narcotics detection. They also aid in searches for lost persons or drowning victims. Last weekend they joined a hunt for a stolen airplane.

One of the busiest times of the year for the Citizen's Unit is during the State Fair. They are official police for the week-long event.

The Unit was founded on Dec. 7, 1941, by Ralph M. Brown, former district attorney and now an Albuquerque lawyer. It is licensed by the Federal Communications Commission.

Applicants for the Citizen's Unit must be a resident of the state for at least one year. After a careful screening, successful candidates are made special deputies with the sheriff's department.

Congratulations

- Born to:**
- Mr. and Mrs. Tom Cleveland (3463-2) a son, Scott Andrew, on May 17.
 - Mr. and Mrs. Don Scranton (1413-1) a son, James Howard, on May 27.
 - Mr. and Mrs. W. R. Atkins (2541-1) a son, James Virgil, on May 20.
 - Mr. and Mrs. W. L. Clement (2541) a daughter, Valerie Jean, on May 27.
 - Mr. and Mrs. Ferdinand Thome (8224-2) a daughter, Rose Marie, on May 22.
 - Mr. and Mrs. Jack Foster (8165-2) a son, John Curtis, on May 30. Shirley is on leave from 8233-2.
 - Mr. and Mrs. Jack Puariea (1431) a son, Benjamin Wayne, on May 21.
 - Mr. and Mrs. D. H. Anderson (5132) a son, Bruce Steven, on May 30.
 - Mr. and Mrs. Charles D. Salazar (4254-2) a son, Ronald Stephen, on May 8.
 - Mr. and Mrs. Leo Arellano (4151) a daughter, Roma Jean, on May 29.

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Telephone Sandia Base
Alpine 6-4411
Ext. 25253, 26135



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Sandia Employees Earn Degrees From University of New Mexico

College degrees were awarded a large number of Sandia Corporation employees this week during commencement exercises at the University of New Mexico.

In addition to those employees mentioned previously in the Lab News, the following received degrees:

H. Duane Arlowe (7312-2), MS degree in electrical engineering. Duane received his BS in EE from the University of Washington and has been at Sandia two years.

Peter M. Barba (1422-4), MS degree in mechanical engineering. Peter came to Sandia three years ago after obtaining his BS in ME at Lehigh University.

Howard J. Cilke (1424-1), MS degree in electrical engineering. Howard graduated from Illinois Institute of Technology with a BS degree in EE and has been employed at Sandia since July 1957.

William H. Closser (5434), MS in electrical engineering. Bill received his BS degree in EE from the University of West Virginia. He has been with the Corporation three years.

J. Kenneth Cole (1322-2), MS degree in mechanical engineering. Ken's BS in ME was awarded him at the University of Kentucky. He has been at Sandia four years.

Gresham G. Downs (1411-2), MS degree in electrical engineering. At Auburn University Gresh received his BS in EE. He has been at Sandia six years.

Cline W. Frasier (7184-2), MS in mechanical engineering. At Washington State University Cline received his BS in ME before coming to Sandia two years ago.

J. Robert Garcia (3133-1), Master's degree in business administration. Bob also received his BBA degree at the University of New Mexico. He has been with the Corporation since November 1952.

W. Daril Gutscher (7221-1), MS degree in electrical engineering. Daril's BS degree in EE was awarded him at Colorado State University. He has been at Sandia six years.

Richard D. Hoaglund (7182-3), MS degree in mechanical engineering. Dick previously obtained his BS in ME at the University of Colorado. He has been at Sandia four years.

Samuel L. Jeffers (7118-1), MS degree in mechanical engineering. Sam graduated from the University of Colorado with a BS in ME. He has been at Sandia for five years.

Fred Karkalik (1314), MS degree in electrical engineering. Fred attended Case Institute of Technology, where he received his BS in EE before coming to Sandia two years ago.

Robert D. Klett (7145-1), MS degree in mechanical engineering. Bob received his BS in ME from Michigan State University. He has been at Sandia two years.

R. Alan Lincoln (1312-3), MS degree in electrical engineering with a minor in business administration. Alan was awarded his BS in EE at Cornell University. For the past six years he has been at Sandia.

John J. Newman (1414-2), MS degree in electrical engineering. John graduated from Montana State University with a BS in EE. He has been at Sandia three years.

W. Max Sigmon (7322-1), MS degree in mechanical engineering. Max received his BS in ME at North Carolina State College. He has been with the Corporation five years.

Theodore E. Smart (7311-3), MS degree in electrical engineering. Ted was awarded his BS in EE at Ohio State University. He has been at Sandia nearly 10 years.

Jose E. Suazo (7133), MS degree in mechanical engineering. Jose also received his BS in EE at the University of New Mexico.

co. He has been at Sandia since 1957.

T. J. Williams, Jr. (1413-2), MS degree in electrical engineering. T. J. also received his BS in EE at the University of New Mexico. He has been with the Corporation six years.

Lowell D. Watkins (7242-1), MS degree in electrical engineering. Lowell obtained his BS in EE from Texas Technological College. He has been at Sandia five years.

Sandians who will receive their Bachelor's degrees will include: William E. Bosken (7311), electrical engineering; William J. Cocke (7125), electrical engineering; Robert G. Foster, Jr. (7322), electrical engineering; Richard O. Heinz (on leave of absence), mathematics; Walter D. Hewitt (2542), electrical engineering; Edward L. Patterson (on leave of absence), electrical engineering; E. A. Postenrieder (3466), accounting; Webb E. Shafer (2622), education and economics; H. C. Sieberman (2323), electrical engineering; J. P. Stark (3451), mathematics; S. O. Woodall (4422), industrial management.

Papers by Sandians To Be Presented At Mexico City Meeting

Eight Sandians have prepared technical papers which will be read at an American Physical Society meeting in Mexico City June 22-24.

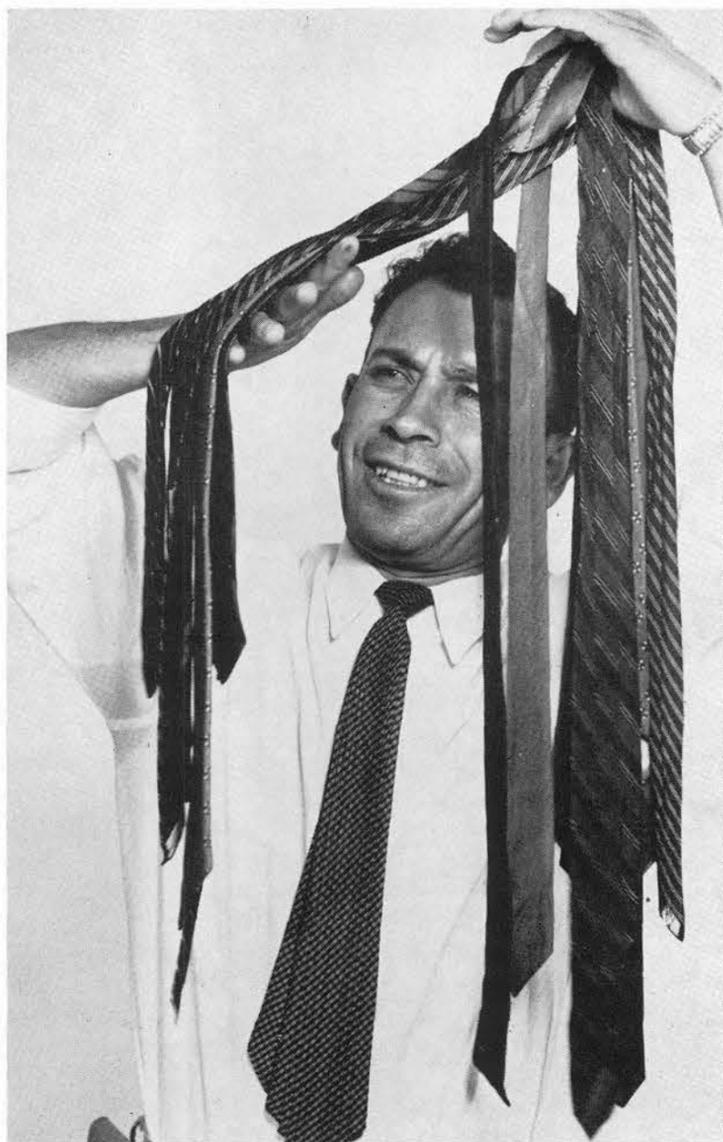
Authors and titles of the papers are as follows: M. L. Merritt (5130), "On the Current Distribution in an Electrically Exploded Foil;" J. D. Shreve, Jr. (5112), "Peak Pressure and Duration Modifications from Reflection of Spherical Shock Waves;"

D. H. Anderson (5132), "Quadrupole Interaction of Li⁺ in the Ferroelectrics LiH₃ (SeO₃)₂ and LiD₃ (SeO₃)₂;" F. L. Vook (5151), "Precision Length Change Measurements on Electron Irradiated Germanium;" H. L. Davis (5152), "A Modified Spin-Wave Theory of Antiferromagnetism;"

A. D. Kantz (5434), C. B. Pierce (5151) and H. H. Sander (5432), "Radiation Induced Hump Structure in Current-Voltage Characteristics of Esaki Tunnel Diodes."

Wedding

Sara Jean Dickenson (3126 assigned to 5110) was married to Samuel W. Hall in Albuquerque on May 29. The couple will make their home here. Sara has been at Sandia a month.



COUNT YOUR BLESSINGS . . . uh . . . ties. Art Pino (2643), father of eight children, is looking forward to Father's Day, Sunday, June 18. But he hopes that his offspring will take some of the suggestions offered below for Father's Day gifts.

Dad's day dilemma?

You May Relax - Father's Day Need Not Present Problems

What to get Dad for Father's Day (Sunday, June 18) always poses a problem. The tie that binds is fine, but not around his neck. Here are a few suggestions for a special present for that special person.

Make it personal. Show your interest in his interests. If he is a collector, find a worthy addition for his collection. If he has a favorite sport select cuff links, tie pin, etc., depicting this sport. Monogrammed handkerchiefs, shirts or bathrobes are also highly personal.

Buy "expensive" gifts. There's a trick to this. Instead of buying the cheapest version of a costly gift, buy the best of a lower-priced item. For instance, choose a fine fountain pen, instead of a

second-rate sport jacket.

Select useful luxury items. Get him something he normally wouldn't buy for himself. If he smokes a pipe find a handsome-looking pipe rack. Buy a barometer or clock for the den.

Choose something durable. A box of candy tastes good, but it doesn't last long. Give him a book he's been wanting for a long time, or a magazine subscription. He'd certainly appreciate a photograph of his children or grandchildren.

Wrap him around your little finger. Take special pains in wrapping your gift for him. Forget the fussy, frilly ribbons and paper, and choose something tweedy-looking or striped. This shows you're thinking of him even down to the last detail.



LONE SANDIA ENTRY in recent Rio Grande Amateur White Water Boat Race was James R. Brathovde (5151), who negotiated the 4.4 miles in 41 minutes in his kayak. Jim has paddled

through the Pacific northwest waters for the past eight years and recently navigated 10 ft. waterfalls in the lower box canyon of the Rio Grande Gorge, an extremely precarious undertaking.



H. D. Arlowe P. M. Barba



H. J. Cilke W. H. Closser



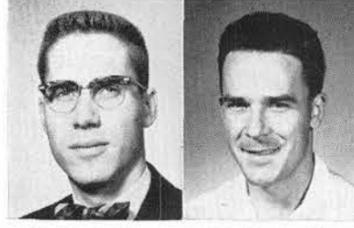
J. K. Cole G. G. Downs



C. W. Frasier J. R. Garcia



W. D. Gutscher R. D. Hoaglund



S. L. Jeffers F. Karkalik



R. D. Klett R. A. Lincoln



J. J. Newman W. M. Sigmon



T. E. Smart J. E. Suazo



T. J. Williams L. D. Watkins

Into the Wild Blue with Sandians' Radio-Controlled Model Airplanes

"After investing considerable money, after spending as much as 500 hours of spare time, after a short prayer, then you fire it up and wring it out."

With these words, Dan Parsons (7224) released his radio-controlled scale model of a Messerschmidt 210. With both its motors roaring, the beautiful red plane shot across the mesa and leaped into the air.

Working the controls from a hand held transmitter, Dan carefully guided the plane into a gentle circle as it gained altitude.

Watching with approval was a group of Sandians, all dedicated to the hobby of designing, building, and flying radio-controlled

(R-C) model airplanes. Most any calm Saturday or Sunday morning around 7:30, the group gathers at a field, located at the north end of San Pedro St. They fly their models and talk shop.

"It looks good," Irv Lenz (7224) was telling Dan. "But you might have to adjust that elevator trim. You're having to work to keep the nose up."

Dan agreed. After fifteen minutes of flying, the fuel in the tanks was low. Dan cut the power in the engines and controlled the plane into a long glide for a bumpy landing.

"Not bad for a first flight," he said. The Messerschmidt is the first twin engine job built by any member of the group. All were glad the flight was successful.

Thunderbolt Model

By this time Ralph Schellenbaum (5113) had fired up his scale model P-47, famous World War II Thunderbolt. As it scooted down the field, only the size was different from the real plane. Detail and design were perfect.

So was the flight. This ship has been flown innumerable times and Ralph is a master at the controls. Through 10 transmitting channels signals were broadcast to the tiny receiver riding in the plane. From the receiver the signals were relayed to servo-motors which in turn work the rudder, elevator, ailerons, engine, and elevator trim.

Ralph pushed the Thunderbolt through barrel rolls, loops, tight turns, figure 8's, steep climbs, and finally a tail spin. Leveling out the plane came roaring overhead. Someone said, "Wow."

Art Everitt (4422) and D. W. "Doc" Savage (7221) were readying a long-lined ship called a "Modified Pegasus." The work of both men, the plane was built by Art while Doc contributed the electronics. It features a steerable nose wheel and brakes.

An old-timer in model airplane building, Art is a former Pacific Coast Wakefield contest winner. His plans and articles have been published in hobby magazines in the U. S. as well as in Europe. A Wakefield plane is a rubber powered model which must meet international specifications.

"I'm a relative newcomer to R-C planes," Art says, "and this is the biggest thrill yet. In addition to the challenge of building the plane, there's the fun of actually controlling its flight. This, too, takes a lot of practice and skill."

Much Satisfaction

Most of the men agree with Art. A great deal of satisfaction is derived from the design and construction of the planes. Once built, however, many hours of flying

pleasure result.

Kits are available which contain all the necessary material and plans but most of the Sandians prefer to design and build their own. For instance, Dan Parsons drew the plans for the Messerschmidt from a small five-inch drawing he found in a magazine. The finished model has an 84-in. wingspread.

Dan McKnight (3424) flies an F-100 jet in the Air National Guard but is a devoted R-C model man also. He finds that flying the models requires the same kind of quick judgment as the jet. Right now he's experimenting with a single channel control setup on a rugged "combat" model. When completed, the plane will carry a long streamer from the tail and face a similarly outfitted ship. The idea is for his plane to sever the streamer from the "enemy" plane or vice versa while both planes are in flight.

"Should be pretty exciting," Dan says.

Harry Mason and Gene Carter (both 1431) are two other Sandians who belong to the R-C group. Both have been active in building and flying for about a year. Harry is planning to design and build his own electronic system after he gains more experience in flying.

High Wing Plane

Bob Harley (2534) likes high wing monoplanes with single-channel rudder control for long high altitude flights. Ted Blaz (4411-1) shares this enthusiasm but is looking forward to a new five-channel control system. He's building a new plane for the system now.

Irv Lenz (7224) is in the final stages of constructing a Pegasus. His previous planes are about "flown out." Irv would rather fly the planes than build them, but still puts a lot of craftsmanship into construction.

Ed Cave (3113), another member of the informal group, is currently flying a high wing job called a "Mambo" but has a half-dozen projects going including a small 3-ft. plane of his own design.

"Contrary to some opinion," Dan Parsons says, "you don't have to be an electronics expert to be a R-C modeler. Still, you can get as involved as you like in the sport. You can use aerodynamics, electrical or mechanical engineering, internal combustion engine theory, strength of materials, or any of these to any degree you want. Depends on what you want from a hobby."

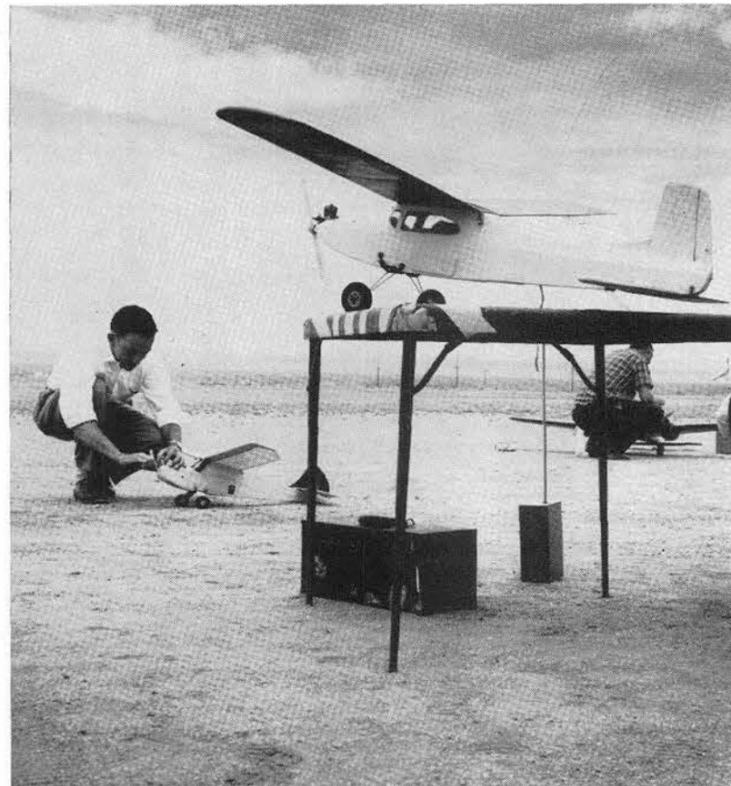
"No two flights are ever alike," Dan comments. "It's always exciting."



DOC SAVAGE displays model P-51 Mustang. Ship has been flown numerous times, has survived several crack-ups. Plane was originally built by Art Everitt.



MODEL THUNDERBOLT built by Ralph Schellenbaum is scale replica of famed World War II fighter. Ship is perfect in detail, even to tiny pilot in cockpit.



BOB HARLEY readies one of his high wing monoplanes for flight. He uses single channel rudder control, achieves altitude flights.



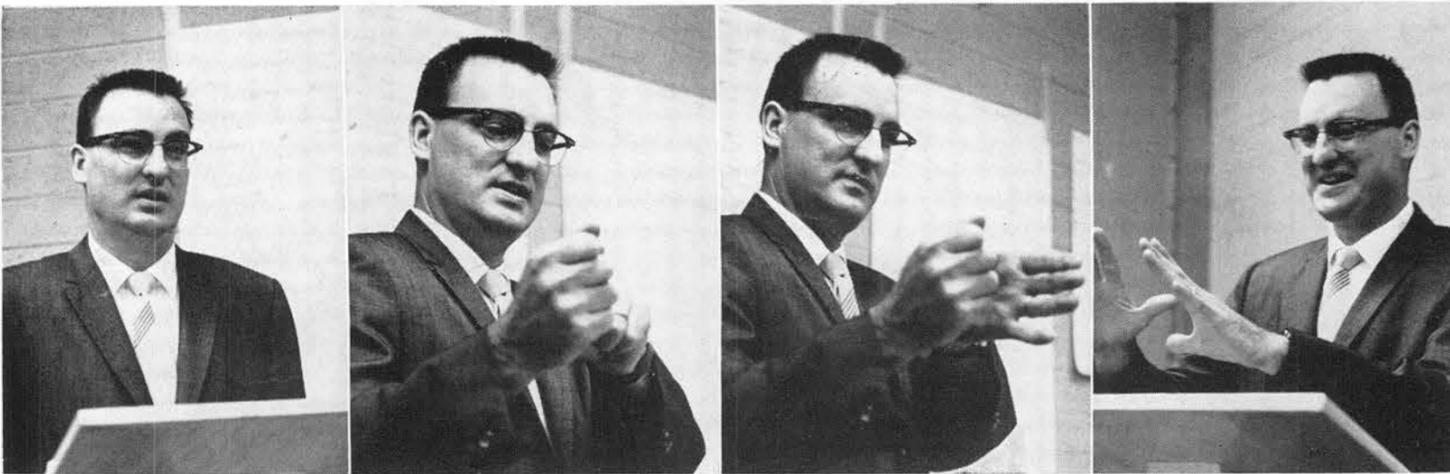
HIGH FLYING Thunderbolt is guided through intricate aerobatics by builder Ralph Schellenbaum. Radio transmitting and receiving system has range of several miles. It is built and distributed nationally by an Albuquerque manufacturing firm.



TWIN-ENGINE Messerschmidt 210 built by Dan Parsons had first flight last week. More than 500 hours of spare time work went into design and construction of the model. This is first twin-engine plane built by a member of Sandia's informal radio-controlled model airplane building group.



"MODIFIED PEGASUS" is displayed by Doc Savage and Art Everitt, right. Plane is work of both men—constructed by Art while Doc contributed electronics, including steerable nose wheel and brakes.



ALAN D. SWAIN, Sandia human factors specialist—"I think that a human factors specialist who gives a weapon system the once over lightly treatment in search for dramatic error-likely situations, and who stops his evaluation at that point, is making a fundamental error in methodology. In the first place, dramatic design oversights don't occur that often. Design engineers in the past few years have become

alerted to human factors considerations and the major bloopers are getting harder to find. . . . The total error variance in a weapon system is a cumulation of all sources of error. And several relatively undramatic error-like situations can wreak just as much havoc as the more dramatic situations. The old nursery rhyme bit about 'for want of a nail the nation was lost' is applicable. . . ."

Identifying error-likely situations . . .

Man-Machine System Interaction Unique Area of Sandia Human Factors Specialist

"The human factors specialist plays an important role in identifying error-likely design features," Alan D. Swain (1443) told a Reliability Colloquium last week. Title of the talk was "Man-Machine Systems and Human Factors Engineering."

As one of the newest members of the weapons development team, Alan brings to Sandia the unique viewpoint of the human factors specialist. Since February he has been a member of Reliability Development and Systems Evaluation Division 1443, but performs on request as a human factors consultant to all Sandia organizations.

"We are concerned primarily with man-machine systems analysis and secondarily with human factors engineering," Alan said. "The systems approach means we need to insure that the man and machine interaction makes for adequate system performance and reliability."

An error-likely situation is one where the operator of a machine is required to perform tasks contrary to usual human conditioning or which are incompatible with his capabilities and limitations. A timer that has to be ro-

tated counter-clockwise for an increase in value would be a simple example. Other error-likely situations occur when design features of the machine limit human participation.

Many Examples

Alan gave many examples of these situations, including one concerning color coding of equipment. A change in the colors being considered for the coding drastically decreased the possibility of error occurring because of color blindness on the part of the operator.

Another example concerned recommending a warning signal to be included in an aircraft weapon system "lock-on" device. As originally designed, the pilot would "lock-on" target and automatic sequencing would take over. If, for any reason, the pilot had to abandon the pursuit, his fire-control would still be armed and waiting for a target. Unless he stopped the sequence, a very real danger existed. Installation of a warning signal would correct the situation.

To locate error-likely situations, Alan prefers to perform a thorough man-machine systems

analysis. This is a complete study of the weapon system from factory to stockpile to target. It concentrates on every operation of the system by all personnel. Considered are such factors as transfer of training from peacetime to wartime conditions, skills, experience, training, and motivation of operating personnel plus the controls, information displays, and all related devices. In other words, as complete a compilation of information as possible is made and charted on a time and task flow chart.

Identify Errors

"From an analysis of the flow chart, error-likely situations are identified and recommendations are made to correct them," Alan said. "Ideally, the human factors specialist performs his man-machine systems analysis early in the design stages of the system and reviews progress of the weapon de-

velopment periodically. In this manner changes may be made without significant cost or delay."

Alan brings to his job at Sandia more than 10 years experience in human factors applications to weapon systems. From 1945 to '56 he performed consultant services to the Research Directorate, Armed Forces Special Weapon Command, Kirtland AFB. He has been associated with the Psychological Corporation, American Institute for Research, and Dunlap and Associates, Inc., human factors consulting firms. He has had many technical papers and reports published including "Factors Affecting Degree of Automation in Test and Checkout Equipment," a major study performed under contract to the RANL Corporation.

Alan attended Ohio State University earning his BA degree in 1948, MA in 1949, and PhD in 1953, all in psychology.

Sandia's New Pulsed Reactor Being Used in Radiation Studies

Sandia Corporation's new pulsed nuclear reactor is now in operation in Area III.

The reactor is a source of fast neutrons and gamma rays for use in radiation effects studies. The bursts or pulses are of brief duration of the order of 50 micro-seconds (50 millionths of a second).

The reactor in the Sandia Pulsed Reactor Facility (SPRF) is similar to the Godiva reactor which has been operated at Los Alamos Scientific Laboratory for about eight years. The reactor with its stand is about four ft. high and 30 in. square. The area of the reactor which contains the fuel elements is about seven in. high and seven in. in diameter. Housing the reactor is a dome-

shaped building which has an inside diameter of 30 ft. and is 20 ft. high at its peak. The walls of the reactor building are 54 in. thick. The control building for SPRF is some 200 ft. from the reactor building.

D. M. Ellett, supervisor of Sandia's Nuclear Facilities and Operations Division 5431, commented that safety aspects were a prime consideration in the design of SPRF. Normal operation of SPRF will not involve radiation levels hazardous to operating personnel or to occupants of adjacent installations.

43 Government Vehicles to be Sold At Sale in Los Alamos Tomorrow

Some 43 surplus government vehicles and forklifts, located at Sandia Corporation's salvage yard, will be among the items sold at a sale tomorrow. The sale will be held at the Civic Auditorium at Los Alamos.

Bidders are urged to attend the sale at Los Alamos, where bid cards will be accepted the day of the sale on each lot as offered. Original bids may be rejected, and those bidders present will have the opportunity of re-bidding on the rejected lots.

Surplus vehicles for sale are three 4-door sedans, one 1955 Ford, one 1957 Ford and one 1956 Chev.; three delivery sedans, 1957 Fords; four 8-passenger Chev. carryalls, one 1956, one 1957, two 1958; seven 1/2-ton trucks, one 1958 pickup Dodge, three 1955 Fords, one 1949, one 1956 and one 1957 Chevrolets; one 1951 Ford truck

with 500-gallon gasoline tank and pump; one 1954 Chevrolet panel truck.

One 1955 Dodge power wagon, 4x4 with front winch; one 1952 Mack 10T. tractor; one Dorsey Trailer, 8-ft. wide x 15-ft. long; three gasoline forklifts; 16 electric forklifts, one electric truck, "Pony Express" 1/2-ton, and one gasoline tug, Clark 1951.

For additional information contact George Browning (4622), ext. 27142.

Continued from Page One . . .

Zero G Facility in Area III

through several successive bounces.

Designer of this unique test device is Marcel Reynolds of Facility Planning Section 7311-1.

"Previously all weightlessness tests had been conducted in an aircraft," Marcel says. "The condition can be reached at the peak of a parabolic flight path. But this is expensive and out of the question for our purposes. We need to conduct hundreds of tests under varying and precisely controlled conditions."

Short Time Scale

After a couple of weeks of study, Marcel came up with the present system for the test facility. "We were working under short time scales and had to have the facility ready as quickly as possible. One of the features of the design

was its easy fabrication," he says.

The instrumentation package was another problem. John Patrick (7312-1) contributed the design of the compact cylinder which contains, in addition to accelerometers and pressure transducers, a tape recorder, a 16-mm movie camera, and power supplies. It is 32 inches long with a radius of five and one half inches.

After a test series, the tape is played back through a recording oscillograph which converts the data into a graph display. The graph shows all pressures, accelerations, g-levels, and switch closures simultaneously as a complete history of the tests. Film from the movie camera provides a visual record of the performance of the component.

AEC Receives Bids For Construction in Coyote Test Field

The AEC announced this week the apparent low bidder for a new Explosive Devices Facility for Sandia Laboratory. The facility, to be located in Coyote Test Field, will be used by Advanced Firing Set Development Division 1134 for studies of explosives transducers.

Underwood-Testman Co. of Albuquerque submitted the apparent low bid of \$136,000 for the construction of the five buildings making up the facility.

One building of 1700 sq. ft. will be of heavy reinforced concrete, partially underground. The project also calls for two concrete arch buildings, each containing about 250 sq. ft., and two prefabricated metal magazine structures.

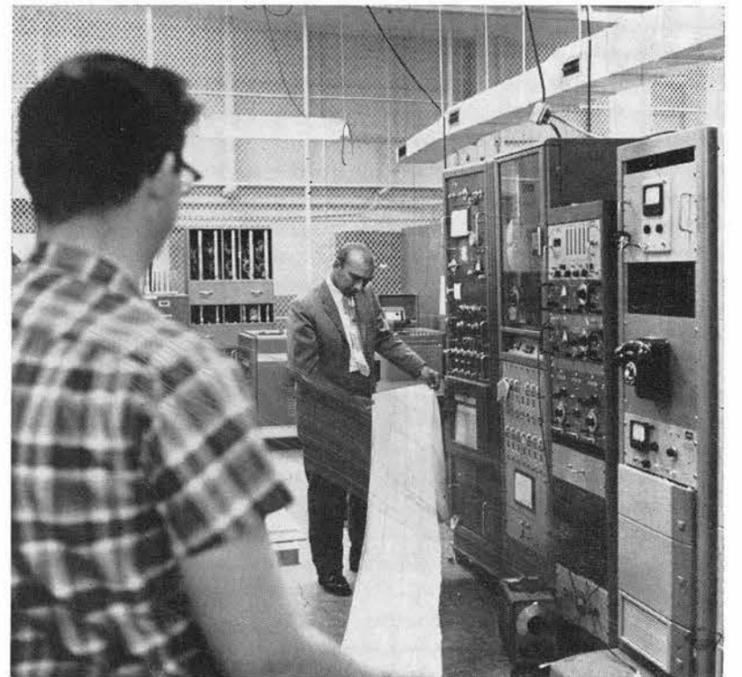
Work is to be completed within 150 days after the contractor receives notice to proceed.

V. O. Kerr (4543-3) is Plant Engineering Department project engineer.

Welcome Newcomers

May 22-June 2

Albuquerque	
*Beatrice O. Burd	4623
Mary A. K. Campbell	3126
Patsy J. Cates	3126
P. La Vaun Christensen	3126
*Hilda Cruz	4212
Anne F. Felsen	3126
*Phyllis J. Finlayson	3126
N. Ann Harber	3126
*Gerard W. Hauer, Jr.	7312
Lillian E. Huff	3126
Roselle McDowell	3153
Frances P. Shelton	3126
E. Lily Wadley	3461
Mae T. Wood	3126
California	
Bruno Morosin, Santa Monica	5151
Colorado	
Richard E. Bertrand, Thornton	3121
Missouri	
William P. Mahaffey, Princeton	3465
Ohio	
Carl J. Cron, Dayton	1122
Oklahoma	
Ruben S. Urenda, Stillwater	1332
Virginia	
Kenneth S. Haynes, Charlottesville	5431
Wyoming	
Laura E. Hill, Laramie	5152
Returned from Leave	
Santiago Abeyta	4574
Harold M. Barnett	1314
George R. Edgerly	3466
Richard O. Heinz	1424
John W. Northrip III	5132
Glendon D. Self	2561
Temporary Summer Hires—	
Albuquerque unless otherwise indicated	
*John F. Brady, Jr.	7251
*Donna G. Burke	3126
*Maureen G. Conlon	3421
*Betty D. Cummings	4613
*Franklin K. Deever, Fayetteville, Ark.	7183
*John D. Dugger	3464
*Roland L. Finley	4543
*Dolores S. Garcia	4333
*Deanna Irvin, Portales, N. M.	3431
*Anthony R. Konecny, Berkeley, Calif.	2564
*William B. Smith, Houston, Tex.	5426
* Denotes rehired	
Livermore New Hires—March 18-May 15	
Janice M. Azavedo, Livermore	8232-2
*John J. Bedford, Fort Worth, Tex.	8211-3
Raymond O. Campbell,	
Walnut Creek, Calif.	8241-3
Robert D. Corbett, Tracy, Calif.	8232-4
Earl C. Deno, Pittsburg, Calif.	8222-1
Charles E. Frager, Pleasanton, Calif.	8222-1
Robert J. Hurst, Oakley, Calif.	8222-3
James S. Jardine, Livermore	8232-4
Daniel J. Masson, La Crosse, Wis.	8161-2
Alfred T. Nathan, Los Angeles	8115-1
Frank Nieto, Castro Valley, Calif.	8223-3
Richard A. Prouty, Chicago, Ill.	8155-2
Mary F. Quantock, Livermore	8212-3
Martelle G. Reid, Hayward, Calif.	8232-1
James N. Rogers, Pleasanton, Calif.	8142-1
Kenneth L. Romine,	
Inglewood, Calif.	8142-2
Hugh C. Smith, Oakland, Calif.	8221-2
Jeanette E. Spears, Livermore	8212-3
Durrell R. Teague,	
Brentwood, Calif.	8232-1



TEST DATA read out is performed after tape recording is converted to graph display in the Bldg. 860 Data Center. At left is Bob Tomlinson, operator. Marcel Reynolds is studying the test results.

Skin Divers Show Prize Winning Underwater Film

A two-man submarine and a prize-winning underwater film will highlight a program June 23 at the Livermore High School auditorium sponsored by the Livermore skin divers club, the Vaqueros del Mar, according to arrangements committeemen Tom Brumleve (8151-2) and Joe Viera (8156-2).

The program, the most ambitious to be presented by the non-profit organization in its three year history, will begin at 8 p.m. and will be open to the public. Donation of 75 cents for adults and 25 cents for children will be requested to defray expenses.

Other Livermore Laboratory employees active in the group are Bobbie Balanda (8233-1), Don Lloyd (8155-1), and Don Knudson (8123-3).

Herb Sisson Top Bowler of Season In Major League

Sandia Base Major Bowling League (scratch), composed entirely of Sandia Corporation and AEC employees, recently completed its 35-week season.

Herb Sisson (1414) ended the season with a 200 average for 96 games. Andy Blain (4624) and Ed Gieseker (2632) tied for high individual series with 702. The high individual game of 277 was rolled by Gene Daniels (4411).

Gulton Industries team won the league championship, and The Barn team was runner-up. Henry's Men's Wear team set a new league record with a high team game of 1104. High team series was won by Harper's Furs with 2953.

Members of the winning Gulton team are Herb Sisson, Tony Repetti (1414), Jim Hay (4253), Neith Pollard (1411), Don Russell (2642) and Ed Willett (4321).

B. H. Anderson Reads Paper to Graduates of Naval Postgrad School

"Development and Uses of Structural Plastic Foams" is the title of a technical paper written by B. H. Anderson (1112-2).

He presented the paper to mechanical engineering Officer Candidates, U.S. Naval Postgraduate School, Monterey, Calif., on May 24.

Remodeling Work to Begin on Bldg. 610

J. W. Barlow Construction Co. of Albuquerque is apparent low bidder for modifications to Bldg. 610, according to an AEC announcement. The firm submitted a bid of \$26,882.

The project will convert the building to office space for Service and Benefits Division 3122, Employee Publications Division 3432, and Community Relations Section 3431-2.

Work is to be completed within 38 days after the contractor receives notice to proceed from the AEC.

Tennis Tourney For Employees to Be Played in June

Employee Services Division 3122 is planning a single elimination, singles and doubles tennis tournament to be played on June 17-18 and June 24-25.

Matches will be played on the Los Altos Courts on June 17, and at the Beverly Courts on June 18, 24 and 25. Entry forms may be obtained from 3122-2, Bldg. 829, or by calling ext. 29157. Deadline is June 14.

A tennis ladder is planned after the tournament which will run for the remainder of the season.



"TOOTIE I" is the new name for Jack's 36-foot sea-going home. The custom cruiser is moored at Bethel Island, about 26 miles north of Livermore.

Jack hopes to make a voyage up the coast to Washington as soon as he gets his "sea legs." Livermore personnel enjoy many water sports.

New type mobile home . . .

Floating Household Receives Complete Approval of Jack Grape and Wife

When Jack Grape's (8161-3) car pool members arrive in the morning to take him to work, they don't blow the horn—they shout "ahoy."

Jack, his wife "Tootie," their eight-year-old daughter, Claudia, and their Siamese cat, Su Ling IV, have set up housekeeping on a 36-foot custom cruiser, "Tootie I," moored at Bethel Island, 26 land miles from Livermore. Jack commutes to work with a group of Sandians who live in conventional homes in nearby Brentwood.

Living on a boat is a new experience for the Grapes, but one they have dreamed about for some time. "We've lived in four houses,

one in Chicago, two in Albuquerque and one in Livermore," Jack said, "enough to lose our enthusiasm for suburban life. I don't have any more lawns to mow or household chores to tie me down on weekends. Best of all, if we don't like our neighbors, all we have to do is pick up anchor and move downstream."

Had Home Ashore

The last home the Grapes occupied had 3 bedrooms, a living room and den. "We spent all our leisure time in the den, a room with less space than the main salon on our boat," Jack said.

In addition to the salon, the boat has a completely-equipped modern galley—which Tootie still calls the kitchen—a forward stateroom with four bunks, and a covered fantail. A couch in the main salon, one of the few pieces of furniture Jack salvaged from his home in Livermore, converts into a double bed, as does another couch on the fantail. All told, the boat will sleep eight people comfortably.

The boat offers all the comforts of city life, even a school bus service, plus many advantages not to be found in the normal subdivision. Little Claudia has tried her hand at fishing, dropping a makeshift line over the fantail with the boat still in dock. "She's had a couple of good bites, and we're looking forward to a fresh fish dinner," Jack said.

Although Jack admits to being no fisherman, he indicated he might take up the sport. "My main objection to fishing was that I had to get up so early in the morning to arrive at the fishing spot when the fish were biting. This is one problem I won't have to face anymore."

Ocean-Going

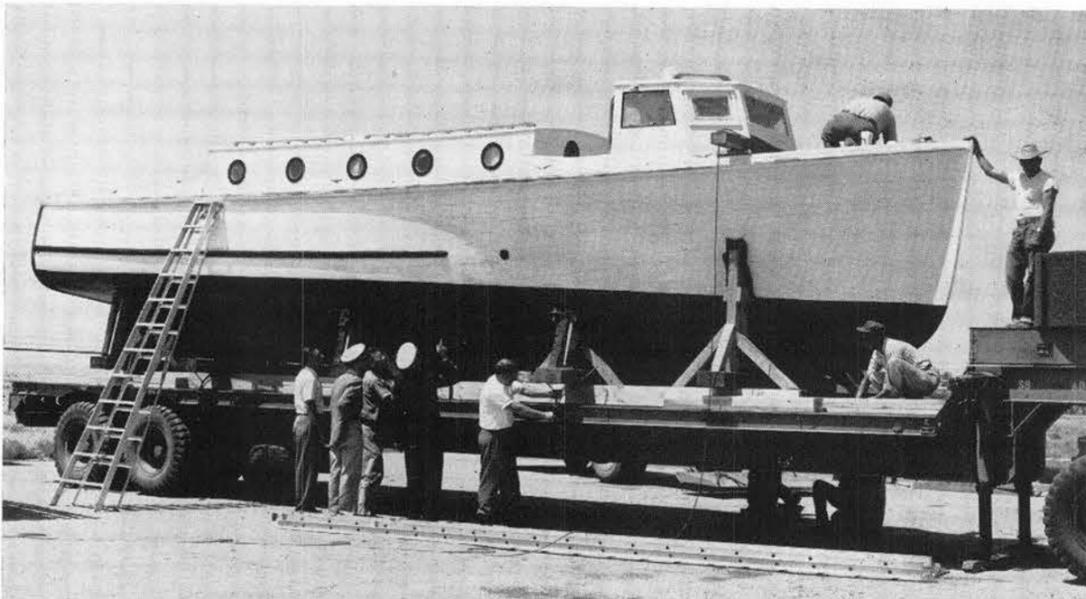
The boat was built for ocean travel, and saw service in Alaskan waters. Its hull, built in 1953, is constructed of massive wooden timbers, sturdy enough to survive severe ocean storms. The boat was re-built in 1955, and outfitted with a Chrysler Crown marine engine, which can propel it at speeds up to 12 knots. The interior of the main salon and fantail is finished in richly-polished mahogany.

Bethel Island, where the Tootie I is moored, is almost directly north of Livermore at the eastern end of San Francisco Bay. "When I learn how to handle the boat we plan to make frequent trips down the bay and eventually out to sea," Jack said. "We're looking forward to making a trip up the coast to Washington State, and perhaps a trip south to Los Angeles some day."

"I still have a lot to learn about sailing, though, before I venture out into the open sea," Jack admitted. "I've never owned a boat before," he added, "not even a row-boat, and one this size requires a good deal of seamanship."

The first time he took the boat out for a cruise, he was maneuvering out of the slip and automatically reached for the pedals, as if he were driving his car. "One thing I learned in a hurry," he said, "there's no brake pedal on a boat." Aside from the lure of an adventurous life at sea, Jack had another reason for giving up a conventional home life. "With all this wonderful California weather and water, I thought we might as well make use of it."

What does his wife think of the idea? "Well," Jack said, "if she didn't like the idea we'd still be living ashore."



AS WORKERS ready the Roadrunner for the 170 mile trip to Conchas Lake, a final check was made by Sea Scout Skipper Grant Johnson (4611), Mate Dave T. Reed (2444), W. T. Owens (7323), local Fleet Reserve Association president, and Ship Committee members L. D. Hubbard and Pat Homan.

Sea Scouts Refurbish 38 ft. Boat — Christen It in True Nautical Fashion

Sea Scouts in land-locked New Mexico might seem out-of-place, but the only troop in the state has a 38 ft. boat afloat on Conchas Lake.

Sea Explorer Ship Roadrunner was christened last Sunday at the lake with the traditional ceremonies. Originally a Navy officers' boat, the Scouts obtained the vessel from the San Diego Surplus Yard through cooperation of Branch 200 of the Fleet Reserve Association, the Scouts' sponsor.

After the boat arrived in February the 23 Sea Scouts, Skipper Grant Johnson (4611), Mate Dave T. Reed (2444), and other interested adults, worked hard to refinish the wood inside and out and rework the 225 hp diesel engine. They hope to carry out more extensive remodeling next year.

This summer the boat will be used to patrol Conchas Lake. The Scouts will do more than sail in their new craft. They will learn sea lore and study sea history.

Skipper Johnson has been active

in scouting for 32 years and was in maritime service during World War II. He has been with the local Sea Scout group since it was organized five years ago.

Margaret De Cou Is Injured in Automobile Accident in Germany

From Giessen, Germany, comes word of Margaret De Cou, who retired last December after working in 4150.

Mrs. De Cou was injured when the car in which she was riding went over an embankment after being struck from the rear. She suffered bad cuts about the face and right eye.

During past months Mrs. De Cou has been visiting a niece, stationed with Special Services in Germany. She now plans to return to the United States as soon as she is well enough to travel.



SKIPPER Grant Johnson (left) and Mate Dave Reed visit in the companionway of the Navy surplus 38 ft. officers' boat, recently refitted by Sea Scouts.



BONING UP on boatsmanship is Jack Grape (8161-3), who with his wife "Tootie," daughter Claudia, and family cat, has forsaken suburbia for life aboard his newly-acquired cabin cruiser.



SURREPTITIOUS LISTENING DEVICES, ranging from microphones hidden in doorknobs to miniature radio receivers, were demonstrated to Sandia Laboratory employees last week. R. L. Durham, of Physical Security Section 8241-1 at Livermore, conducted the lectures.

Half-Staff Security Flag to Indicate Recent Violation

Two new security flagpoles will soon be visible on Sandia Laboratory's horizon. One will be located near Bldg. 802, and the other by Bldg. 880. A red and yellow flag will signal Sandia Laboratory's daily security record. If it's flying at the top of staff, it means there were no security infractions within the last 24 hours. However, if it sinks to half-staff, someone "goofed."

A similar system has been in effect at Livermore Laboratory for more than a year.

Tech Paper Wins Award for Sandian

D. E. Hurt (2561-1) won second place for a technical paper submitted in a contest sponsored by the Albuquerque Chapter of the American Society for Quality Control. His paper was entitled "Error of Measurement Studies for O Ring Measuring Devices."

W. F. Carstens in Corrales Adobe Theater Production

W. F. Carstens (3423) will play the lead role in the first production of the summer series to be presented by the Corrales Community Theater June 9-11. The play is Thornton Wilder's "The Matchmakers."

Curtain time is 8:30 p.m. at the Adobe Theater, located four and a half miles north of the Alameda-Corrales bridge in Corrales.

Sandia Employees Have Contributed to Fund Raising Drive

Local fund raising drives have been conducted by the New Mexico Chapter of the Arthritis and Rheumatism Foundation and the New Mexico Multiple Sclerosis Society during the past month. Through donations to the Employees Contribution Plan, Sandians have already allocated \$2110 to the arthritis and rheumatism agency and \$880 to the multiple sclerosis society for the current year.

Seek Witness To Accident

Jack Hughes (5111) was driving home from work on Louisiana NE on the evening of April 25 when an armored car forced his 1960 red Chevrolet into the curb. Jack is now seeking witnesses to verify the accident. If any Sandia employees saw the accident, Jack would like them to contact him at AL 5-5796 after 5 p.m.

W. R. Perret Speaks To Research Committee

William R. Perret (5112) spoke to members of the Mississippi Industrial and Technological Research Committee in Jackson on May 23. His talk was given at the request of the Defense Atomic Support Agency Field Command located in Jackson. Title of his speech was "Close-in Measurements and Instrumentation for Project Dribble."

Sandia Service Awards

15 Years



Edward L. Harley
7118
June 10, 1946



Chester A. Morterud
2544
June 10, 1946



Frank C. Ewing
3463
June 12, 1946



Carlo C. Hunt
4333
June 13, 1946



Frank H. Long
4251
June 17, 1946

10 Years

June 10-23

Eugene H. Copeland 7321, Rollins S. Howard 7184, Alfred J. Laneville 4253, John L. Reimholz 2444, James B. Wade 7224, Adolfo Sanchez 4233, Charles K. Connolly 7321, Avenancio Lucero 1112, Leon W. Luke 4172, Cyril Brady 2642.

John W. Gumm 8162, Roger A. Baroody 8121, Ralph L. Calvert 5422, William McWhorter 8116, William H. Chandler 3221, Eileen T. Zemka 4423, Kathleen Wilson 4213, William L. Martin 3111, Ralph A. Roane 1413, Charles H. Bidwell 1421.

SOFTBALL STANDINGS
Through June 2, 1961

Team	Won	Lost
1300-1400	5	0
2600-3100-4500	4	1
7100-1	4	2
4300-7500	3	3
4400-1	2	3
4200-1	1	5
2400-2500	0	5
National League		
1300-2500	6	1
3400-4100	6	1
1100	5	2
4400-II	4	2
AEC	4	3
2300-4300-7200-I	3	4
7300	3	5
7100-II	2	4
4200-II	2	6
7200-II	0	7

SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER

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

BABY ITEMS, Hedstrom carriage, convertible carriage, stroller, infant seat, bounce chair, sleep/eat chair, car seats; make offer. Carpenter, 8726 Claremont NE, AX 9-1644.

TV, Bendix, table model w/stand and aerial, \$45; Speaker box w/12 in. RCA and 5 in. UTAH, \$7; will sell together for \$50. Fairbanks, 304-A Texas SE.

KODAK Retina 1 3/5 mm camera w/case and flash attachment, Compur rapid shutter f3.5 lens, \$15. Rayner, AM 8-1705.

3 BDR, 1 1/2 bath, carpeting, den, fireplace, built-ins, walls, utility, garage, patio; '54 Ford V8 wagon, \$250; '56 Chevrolet V8 wagon, \$695. Rice, AX 8-2492.

'50 Mercury club coupe, \$250. Wilson, AX 8-0049.

BABY CRIB, \$10. Stang, 6209 Bellamah NE, AL 6-7793.

8N FORD TRACTOR, front end loader, back blade, \$1300; 8.3 irrigated acres, Los Lunas, \$7,885. Stamm, DI 4-5792.

3 BDR, 1 1/2 baths, family-dr., utility w/220, built-in range, Spanish fireplace, vgas, sprinklers, landscaped, walled, \$16,000, no qualifying, Hewitt, AM 8-2563 or AM 8-2822.

MAPLE ROCKING CHAIR, antique, contour seat, sturdy and man-size, rock your troubles away for \$59. Galbreath, 3730 Manchester NW, DI 4-4306.

'60 Volkswagon, 6 passenger pick-up, \$1600. Cordova, DI 4-3063.

MERCEDES 220-S sedan, luxury '58 model, low mileage, \$2450. Alderete, DI 4-5566.

GERMAN SHEPHERD puppies, grandfather CH/Wotan, dark coloring. Call evening, Villella, AX 9-7915.

35' 2 BDR Palace house trailer, \$1095. See at 1135 Sunset Rd. SW, J. E. Young Jr.

2 BDR HOME, carport, close to Sandia Base, \$7600 total, 414 Charleston NE. Curry, AL 6-9779.

'53 CHEVROLET sedan delivery truck, \$395 or best offer; 2 new 6.40x15 tires, \$15 each. Gatlin, AM 8-8151.

ROCKING HORSE, plastic, heavy springs, \$15. Miller, AM 8-5992.

'58 OLDSMOBILE 4 dr. sedan, PS, PB, factory air cond., R&H. Comiskey, AM 8-5120 after 5 p.m.

CAR COOLER, evaporative type, 12 volt, Sears model, \$18. Toyota, 125 El Pueblo Rd. NW, DI 4-2775.

3 BDR HOME, 1 1/2 bath, landscaped, NE Heights, will trade equity, available June 10. Cejka, 9217 Cherokee NE, CH 3-5187.

CRIB, Storkline, natural finish, \$15. Bentz, AM 8-8267.

1957 NORGE automatic washer, deluxe 2 cycle model, \$40. Breipohl, AL 6-3368.

2 ELECTRIC MOTORS, 1 110 VAC 1/4 hp, \$10; 1 115 VAC 1/2 hp, \$15. Pitti, 836 Georgia SE, AL 6-1629.

FAN, 20" portable, window or room fan, new 5 yr. guarantee, thermostat control, reversible, 2-speed, \$30. Lloyd, AM 8-6903.

WESTINGHOUSE waffle iron, \$5; Westinghouse mixer, stand and bowls, \$5; electric fan, \$2; car cooler, \$5. Parks, AM 8-0875.

'60 15' FIBERGLASS BOAT, elec. start, tilted trailer, 2 pr. skis, 4 life jackets, 35 hp Johnson motor, all for \$1500. Chavez, 1036 Dakota SE, AL 5-1585.

CUSHMAN motor scooter, red, new tires, \$95 cash. Johnson, AX 8-8980.

KITCHEN DINETTE, table and 4 chairs, brown and yellow, \$20; Girl's 26" bicycle, \$10. Ford, AL 5-1383.

'48 FORD pickup truck, 4-speed, \$225. Pierson, BU 2-3229.

WINCHESTER Model 88, .308 w/scope, \$115; Remington Model 11, 12 gauge, \$65; Remington 20 gauge, \$65; all/ammunition. Larrabee, AX 9-1172.

KENMORE automatic washing machine, different washing speeds and water temperatures, \$100. Blumenthal, AL 5-8185.

'51 OLDS Super 88, 2 dr, R&H, hydraulic, \$200. Fisher, AX 8-0526.

TWO innerspring roll-away beds; playpen and stroller; umbrella clothes line; camp cots. Roane, AX 9-6554.

'47 UNIVERSAL JEEP, model CJ2A, 4-wheel drive, mother-in-law seat, truck turn signals, \$350. Chacon, 1131 Morris NE, AX 9-3306.

THAYER BABY BED and mattress, high chair and training chair, all for \$22.50. Miller, AL 6-4224.

'57 INDIAN Trailblazer motorcycle, 700 cc, twin, 45 hp; all accessories; terms, \$575, cash, \$500. Davis, AX 8-2108 after 5:30 p.m.

BABY STROLLER with rumble seat, \$15. Orendorff, AM 8-9753 or AM 8-3331.

'57 Volvo station wagon, one owner, low mileage, recently rebuilt engine, \$750. Hurley, AX 8-4440.

MANKIN 3 BDR, 1 1/2 baths, carpets, landscaped corner lot, \$6000 down, GI loan. Newton, AL 6-4725 evenings or week-ends.

17" CAMERANO scarlet and white accordion with master and clarinet switch. Sujka, 2704 Louisiana Blvd. NE, Saturday after 6:30 p.m., all day Sunday.

RADIO, Heath six transistor portable, \$15; record changer Webcor, 3-speed, w/GE cartridge, \$20. Henry, 1828 Florida NE, AL 6-2467.

'53 CHEVROLET, 4-dr., Model 210, new tires, brakes, starter, w/new engine overhaul, heater, powerglide, \$300. Petrini, AX 8-0433.

TRACTOR, International, with angle dozer (crawler type), trade for well equipped farm tractor or \$1000 cash. Jolly, TR 7-2474 after 6 p.m.

TWO WHEEL TRAILER w/box bed, trade or sell \$40; portable dishwasher. Pritchard, AM 8-6430.

4 each 7.60-15 nylon blackwall tires with Oldsmobile rims. Garcia, CH 2-4353 after 5 p.m.

FRIGIDAIRE automatic washer; James portable dishwasher, needs some work, make offer. Linker, AX 9-4057.

24" ROTARY power mower. Hager, AX 9-1939.

DAY-BED COUCH, \$20; cream dresser w/mirror, \$10; walnut vanity w/full length mirror, \$15; electric mower, \$15. Farrell, AX 9-4938.

FENCE, new, 150 ft. chain link, 6 ft. high, \$85; 11 T posts, 8 ft. high, \$1.25 each. Borah, AX 9-0246.

CHINA CABINET, Colonial solid cherry, upper doors glass, lower doors wood, \$35. Lohse, AL 5-5650.

NEXT DEADLINE
FOR SHOPPING CENTER ADS
Friday Noon, June 16

'58 LAMBRETTA Model 125 motor scooter, \$175; combination phonograph, 3-speed, AM FM console, best offer. Sandgren, AX 9-5007.

STAUFFER Magic Courh. \$365 value for \$150. Fuller, AX 8-0037.

TV, 21" GE for table or stand, \$35 including indoor antenna. Barrett, 1108 Kentucky SE, AM 8-2963.

'56 CHEVROLET V8 station wagon, powerglide, PB, R&H, tinted glass, low mileage, \$850 or make offer. Taylor, AL 5-8840.

BASSET HOUND PUPS, 7 wks. old, AKC registry, shots, seven champions in pedigree, reasonable. Foley, AX 9-7733.

'51 NASH Statesman Tudor w/OD, five good tires, \$195. Thompson, AX 9-2273 after 5 p.m.

APPROXIMATELY SIXTY PUMICE BLOCKS, 6x8x16, used but clean, 12c each. Moore, AL 5-7891.

REFRIGERATOR, Hotpoint, 7 cu. ft., \$25 or best offer. Finlayson, AM 8-5966.

DORMEYER mixer w/bowls, \$10; automatic two-slice toaster, \$5; Lyman Truline Jr. press w/several cartridge holders, \$15. Scranton, AX 9-4902.

GO-KART, Sears, 1 1/4 hp, 2 cycle, Briggs-Stratton engine, \$75 or make offer. Starkovich, AX 9-5445.

'57 Mercury V8 push button drive, assume payments of \$50 per month. Papineau, AL 6-3675 after 6 p.m.

BED COUCH, \$25; 2 chest of drawers, \$5 each, 2 blond end tables, \$5 each. Wickham, 3518 Thaxton SE.

STUDIO COUCH; cherry red davenport w/matching chair; Expandway desk extends into table w/4 chairs; bronstone dinette set; reasonable. Tolmie, AL 6-1636.

COUCH, 2 piece sectional, brown, newly reupholstered, \$85. Schultz, AX 8-2731.

'57 TRIUMPH Tiger Cub motorcycle; '55 Ford V8, automatic transmission, R&H, sacrifice, Abrams, DI 4-8252.

LIVING ROOM SUITE, blue, sofa converts to bed, see to appreciate \$60. Proulx, 9410 Arvada NE, AX 9-6066.

32 CALIBER COLT revolver, 3" barrel, Police Positive Special, \$37. Frenkel, AX 9-3258.

'49 CHEVROLET metal station wagon. Fuqua, AX 9-7972.

UNDERWOOD portable typewriter, \$35. Rudolph, AM 8-2240 after 5 p.m.

SECTIONAL, 3 pieces; Encyclopedia Americana; 7-drawer kneehole desk. Libby, 299-5984.

ROTISSERIE, portable, \$65; Telefunken console Hi-Fi, AM-FM short wave, \$300, cost \$700; console sewing machine w/attach., \$45. Brown, 344-6831.

3 BDR HOME, carpeting and drapes throughout, near schools, landscaped, walls, many extras. \$800 down, \$11,900 total. Baca, AL 5-8452.

AKC REG. Dachshund puppies, 6 wks. old. 1 male, 1 female. Holt, AX 9-7177.

'53 RAMBLER-American, R&H, OD. Dieter, AM 8-5797.

OKEEFE-MERRITT, gas range, chrome top. Ortiz, CH 2-7989.

FOUR used tires, 15x800. Schaffer, AL 5-9473 after 5:30 p.m.

'54 DODGE sedan, powerflite, \$325, original owner. Russell, AX 9-6921.

WOOL CARPETING, 43 sq. yds., light beige, \$3 per yard. Rietz, AL 6-4501 after 5:30 p.m.

PANEL-RAY, 18,000 BTU; wooden bunk bed; wood 4"x6" beams; baby bed; stroller; Babe Tenda; fruit jars, reasonable. Fossum, AL 5-0535.

KENMORE 30" gas range, w/griddle, wide oven; Blizzard 330 portable air cooler, \$25; Wizzard evaporative car cooler, \$8. Amos, 298-4470.

OUTBOARD MOTOR, 12 hp, w/stand; Deep Freezer, chest, 19 cu. ft. Nissen, AL 5-5657.

36" GAS RANGE, \$50. Forsman, AX 9-5570.

2 BDR HOME, carpeting, air conditioning, complete kitchen equipment, automatic washer, large backyard. Bidwell, 9300 Woodland NE, AL 6-3832 or CH 7-0249.

HEATHKIT vacuum tube voltmeter, \$25; Minolta subminiature camera w/filters, film, \$25; Plainsman Pellet pistol, \$5. Singleton, AX 9-1613.

GE 36" electric range, 1956 model, \$85. McCarty, 221 Goriotta NE.

WIRE HAIR TERRIER puppies, AKC registration, ready now; 20" boys bicycle, \$7.50. Horn, AX 9-1856.

BARUCH-LANG enclosure with 4-5" speakers, \$7.50; air coupler with 12" speaker, \$9. Auerbach, CH 2-6478 evenings.

PLASTIC POOL, 8' dia. x 18" deep, wire side supports, \$9.95; redwood dog house, standard size, \$5. Baxter, 1610 Bayita Lane NW, DI 4-7601.

POWER STEERING for '55 Chevrolet; plastic seat covers for 4-dr. Corvair. Hay, CH 2-8663.

LOT 110'x105' Riverview addition, NW Heights overlooking city. Baca, AM 8-2720.

4 BDR Hoffmantown house, large lot 90x125, air conditioned, 2-car garage, 2516 Gen. Arnold NE, Dickinson, ext. 29139.

DOUBLE BED, springs and mattress; window-type air conditioner. Lucero, 268-9668.

\$400 Lionel train set, complete with collapsible 5x10 table, \$50. Harrison, AL 6-0216.

BABY CAR BED, \$5; basinette, \$4; pasteurizer, \$15; Japanese paratrooper bike, \$7.50. Odell, AX 9-7483.

SCOOTER Cushman Hilander, very reasonable. Gary, 1915 Dakota NE, AL 6-7325.

GREEN WOOL wilton rug, 12'x15' w/pad, \$30; another smaller matching rug from dining area could be made into hall runner, \$10. Sherwin, AL 5-8866.

FOR RENT

FURNISHED or unfurnished house. Randall, 515 Aztec NW, DI 4-8976.

3 BDR, 1 1/2 bath, air conditioned, landscaped, near schools, NE Heights, Available June 10. Cejka, 9217 Cherokee NE, CH 3-5187.

2 BDR house, furnished, air conditioned, attached garage, 200 block Jefferson NE. Landrum, DI 4-3940 after 5 p.m.

HOUSE for lease for living and/or business, \$125, immediate occupancy. Orendorff, AM 8-9753 or AM 8-3331 evenings.

2 BDR APT. SE Heights, range, refrigerator, washer rough-in, air conditioned, carpeted, fenced yard, storage room, \$85. Petrone, AL 5-3633.

2 BDR APT. in brick triplex, air conditioned, newly decorated, water and garbage paid, storage space, stove and refrigerator. Tillman, 528 Cardenas SE, AL 5-6292.

SANDIA PARK, modern 1 BDR house, furnished, \$75 per month plus utilities. Miller, BU 2-3168.

APT. unfurnished, stove and refrigerator, air conditioned, near bases, \$65. Milligan, CH 2-2959.

APT., nice four room w/garage, gas range, refrigerator, water and garbage paid, 1301 Princeton Dr. SE, Nott, AX 9-2232.

SMALL 4 room house, unfurnished, close to bases, \$80. West, AL 5-0456.

LARGE BEAUTIFULLY FURNISHED 1 BDR apt, all electric kitchen, garage, private patio, excellent NE neighborhood. Brookshire, AL 6-3466.

WANTED

HOMES for kittens. Wade, AX 9-2050.

WILL baby-sit in my house near base, or in your home. Newhouse, AL 5-7781.

RIDERS from 8400 Second NW. ext. 25243, Hofferf.

COUNTRY HOME for Golden Retriever, likes children, guns and cats. Hayes, ext. 25170.

HOME for kittens, take your choice of seven, black, grey. Wheeler, AL 6-6230.

RIDE from the vicinity of 6th St. and Indian School Rd. SW to Bldg. 802. Dyer, CH 2-8830.

USED SINGER sewing machine, one with attachments preferred. Gonzales, DI 4-2282.

RIDERS from Blake and Foothill SW and Barcelona Bridge to vicinity of Bldg. 836. Benton, TR 7-0873.

RIDE OR JOIN CARPOOL from 2812 Cuervo NE to Bldg. 880. Slack, AM 8-3289.

JUDO SUIT, medium size (12-16). Holstrom, DI 4-5216.

TRADE gas drier for Kenmore electric drier, never been used; also have free kittens. Tatum, TR 7-0997.

HOMES for 3 puppies, 6 wks. old, small. Baisdon, 9817 Menaul NE, AX 9-8679.

LOST AND FOUND

LOST—Bifocal glasses w/black-silver bows in brown case, ballpoint pen w/initials DHA, red and white license tag w/"Land of Enchantment", dark blue plastic brief case, 15 year SC tie bar, white cardigan sweater, keys on SC family day chain, Albuquerque National check book. LOST AND FOUND, ext. 26149.

FOUND—Copper link bracelet, safety sunglasses, gold earring w/pink and rust pearls, 2 Ford keys on John Young holder, 2 keys on clip, man's gold ring w/Spearhead Div. Belgium and silver turquoise ring both on safety pin. LOST AND FOUND, ext. 26149.

FOR SALE AT LIVERMORE

AIR CONDITIONER, Fedders 1-ton capacity, only used 2 seasons, original price \$210, selling price \$100. Koetting, Ext. 2348.

'49 STUDEBAKER Pickup, 3/4-ton, 4-speed transmission, \$275. Nepple, HI 7-5327.

3 BDR., 2 bath Sunset Home, electric kitchen, built-in refrigerator-freezer, dishwasher, range, disposal, insulated, fenced, patio, soft water. Smith, HI 7-1299.

'53 FORD, 2-dr. sedan, R&H, overdrive, \$200 or best offer. Clem, HI 7-4044.

'49 CHEVROLET Pickup, \$400 or best offer. Forrest, HI 7-1044.

CUSTOM CRAFT Cabin Cruiser, 17 ft., Mark 55 outboard, flying bridge, plywood hull, and trailer, \$1,200. Roske, HI 7-4429.

SEAT COVERS, clear plastic, for '60 4-dr. Corvair, \$12.50; Breakfast bar stools, 5, light wood, rush seats, \$20. Mendenhall, Ext. 2389.

KODIAK Bear Rug. Geary, HI 7-1450.

ELECTRIC Sewing Machine, Ironer, and Dryer. Loveless, HI 7-3678.

2 SLEEPING Bags, 3-lb. Dacron, \$10 ea. or trade for mummy type sleeping bags and mountain tent. Winter, HI 7-3302.

MISCELLANEOUS Mechanic Tools, number of sockets, wrenches, chisels, and pliers, whole lot \$5. Ostrander, HI 7-2616.

Supervisory Appointments

JIM W. GALBREATH to manager of Public Relations and Employee Publications Department 3430.



Mr. Galbreath came to Sandia as an employee interviewer in November 1950. In January 1951 he became supervisor of the Men's Placement Section. In November 1951 he was promoted to supervisor of Employee Records & Processing Division and since that time has been rotated to Employee Services, Personnel Development, and Employment Division. For one period of time he was TDSR for G. A. Fowler, then Director of Electronics.

Before coming to Albuquerque Mr. Galbreath operated his own advertising agency in St. Louis, Mo., for four years.

He is a graduate of the University of Missouri with a Bachelor's degree in journalism and is a member of Alpha Delta Sigma, advertising honorary society.

During World War II Mr. Galbreath served four years with the Field Artillery, some of the time in the Mediterranean Theater.

HOLT J. GAY to supervisor of Technical Section 7535-2, Surveillance Division C.

Holt was with the Corporation from September 1950 until the following March as a staff member in the Technical Services Division. He returned to Sandia a year later to work in Structural Analysis Division and in a Project Division.



From 1951-52 he worked for Bell Aircraft at Holloman AFB as a flight test engineer.

Holt received both BS and MS degrees in mechanical engineering from the University of New Mexico. He is a member of Pi Tau Sigma, honorary society, the New Mexico Society of Professional Engineers, and is a registered professional engineer in New Mexico.

During World War II he served in the Navy and as a Marine fighter pilot.

JAMES E. BAYLOR to manager of Safety Engineering Department 3210.



Mr. Baylor has been with Sandia Corporation 10 years. He became supervisor of a Standards Engineering section in 1953 and two years later was promoted to supervisor of Safety Engineering Division 3211.

Previously he taught mechanical engineering and safety engineering at the University of Denver from 1947-51. Mr. Baylor also instructed at the University of New Mexico for a similar period.

His work experience includes three years as safety engineer for the Corps of Engineers, Albuquerque District, and seven years as assistant production manager for International Harvester in Canton, Ill.

Mr. Baylor received his BS degree in mechanical engineering from Purdue University and has also taken some graduate courses there.

He is a registered professional engineer in New Mexico and is a member of the National Society of Professional Engineers.

PAUL D. O'BRIEN to supervisor of SPRF (Sandia Pulsed Reactor Facility) Operations Section 5431-3, Nuclear Facilities and Operations Division.

Paul has been assigned to the same division during his two years with Sandia. Previously he was with Los Alamos Scientific Laboratory for seven years and worked on the Omega West reactor.



Before coming to New Mexico he worked a year for Buick in Flint, Mich., as a student engineer.

Paul received his Bachelor's degree in mechanical engineering from the University of Dayton, his Master's degree in nuclear engineering from the University of New Mexico, and has completed some work toward his PhD degree.

He is a member of the American Nuclear Society.

During World War II he served five years in the Army Air Corps, part of the time in the Pacific.

Coronado Club Members to Elect Six New Directors on June 26

Six new directors will be elected at the annual meeting of the Coronado Club on Monday, June 26, at 7 p.m. Reports on the club's activities for FY 1961 will also be presented at this time.

Persons nominated by the present Board of Directors are Pearson Crosby (AEC-ALOO), Bob Berry (7185), Paul Jones (2561), Phil Arnold (3453), Edward Ronan (7133) and Bob Elsbrock (3311). Other nominations will be accepted from the floor.

The six current directors who will serve again next year are

John McLay (1420), Charles Selby (2621), James Mick (4254), Jack LaFleur (2544), and the two directors appointed by Sandia Corporation and AEC-SAO.

Those eligible to vote in the election must be active members of the club who are not delinquent in payment of their dues and who have not joined or rejoined the club within 10 days preceding the meeting. At least 100 members must attend the meeting.

Refreshments will be served at the end of the meeting.

Two Russian Courses Offered This Summer

Two Out-of-Hours courses in Russian will be offered during the summer months, Technical and Trades Training Division 3132 has announced. The courses will be Russian 1A (PSI) and Russian 1B.

The Russian 1A course will be by Programmed Self Instruction and will use a programmed textbook. E. P. Quigley (2564) will instruct this course.

Russian 1B will be a refresher and expansion of the PSI course just completed this spring semester. It will be a transition to Russian 2 and will introduce technical terminology and grammar plus practice in conversation. Instructor will be Marcel Weinreich (3421).

Classes will begin on Monday, June 19.

Enrollment cards may be obtained by calling Division 3132, ext. 47255 or 48138. Enrollment period is from June 12 through 16.

Yale Professor to Speak at Sandia on 'Nuclear Molecules'

"Nuclear Molecules" will be discussed by Dr. D. Allan Bromley, Yale University physics professor, at a Sandia Colloquium on Wednesday, June 14, at 9:30 a.m. in Bldg. 815. Tickets are not required for the meeting.

Dr. Bromley recently joined the Physics Department at Yale, having previously been at Chalk River Tandem Accelerator. For further information and for appointments for individual conferences with Prof. Bromley, call J. D. Shreve, Jr., (5112), ext. 33140.

Credit Union

Only one cashier is on duty at the Sandia Laboratory Federal Credit Union office between 1 and 2 p.m. daily. Dale Bellamy, Credit Union manager, requests that people do not call the office during this period since it is difficult for the cashier to handle both telephone and office traffic.

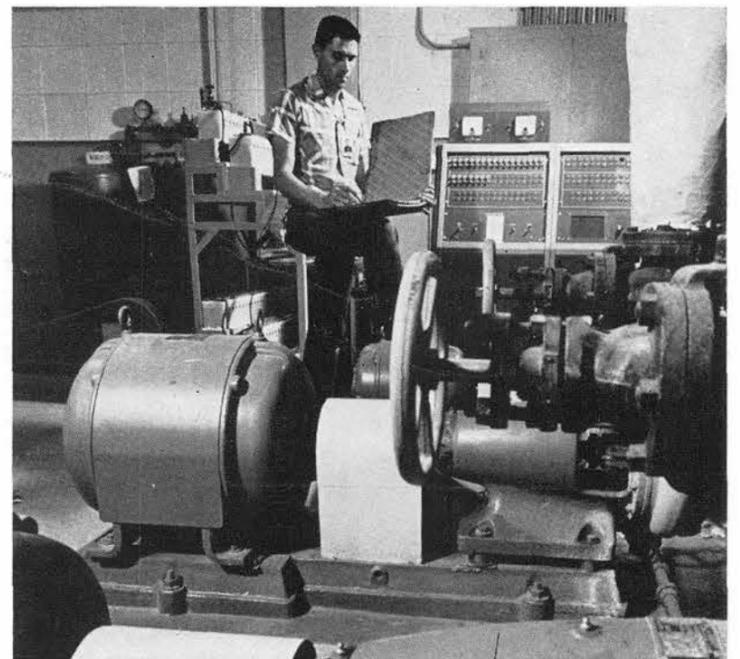
Santiago Garcia To Retire June 30

Santiago Garcia, a Corporation employee for almost 13 years, will retire June 30. He has worked in Labor Support and Grounds Maintenance Division 4575 the entire time.



Mr. Garcia plans to travel to California and Las Vegas, Nev., with his wife and two children. When he returns, he's going to do a little work on his farm.

His mailing address is Route 5, Box 5274, Albuquerque.



TROUBLE ALARM and Field Selector Panel connected to Bldg. 802 air conditioning and heating equipment is shown in background. Lyle W. Burns (4511) makes notations in daily log for comparison with data recorded on the central monitor in Bldg. 887.

New Air Conditioning Monitoring System Being Installed Here

The first part of a plant-wide central monitoring and control system for Sandia Laboratory's major air conditioning and heating systems is installed and operating. Automatic and remotely controlled monitoring of the giant turbine and related air conditioning equipment in Bldg. 802 is possible from a console located in Bldg. 887.

The system is currently being installed in Bldgs. 894 and 880 and future installation is planned for all the Laboratory's major buildings.

"Chief advantages of the system," according to W. C. Elskes (4511), system originator, "is to release men from constant inspection of the equipment so that they may perform preventive maintenance. This will permit better utilization of the skills of the men and give the equipment longer operating life. As it stands now, we can only handle breakdown maintenance."

Mr. Elskes also pointed out that the data reported by the automatic monitoring system can reveal trouble areas in the air conditioning system and enable preventive maintenance.

Reports Automatically

Automatically reported to the central board in Bldg. 887 are such data as turbine oil temperature, compressor and oil bearing temperature, oil pressure, controller air pressure, air pressure, condenser discharge pressure plus temperatures at various "zones" of the building. In all, some 100 bits of information are reported from each station.

The system is flexible and may be easily expanded to handle additional information. The data

can be reported automatically at set periods of time, called in sequence manually or specific locations can be reported on command.

The information is primarily in digital form, although "alarm" information is also reported. This is either a simple "yes" or "no" concerning operating condition of various equipment. A "shut-off" control from the central board is provided for emergency situations.

Data is recorded by automatic printer for permanent records and also displayed on the console for visual read-out.

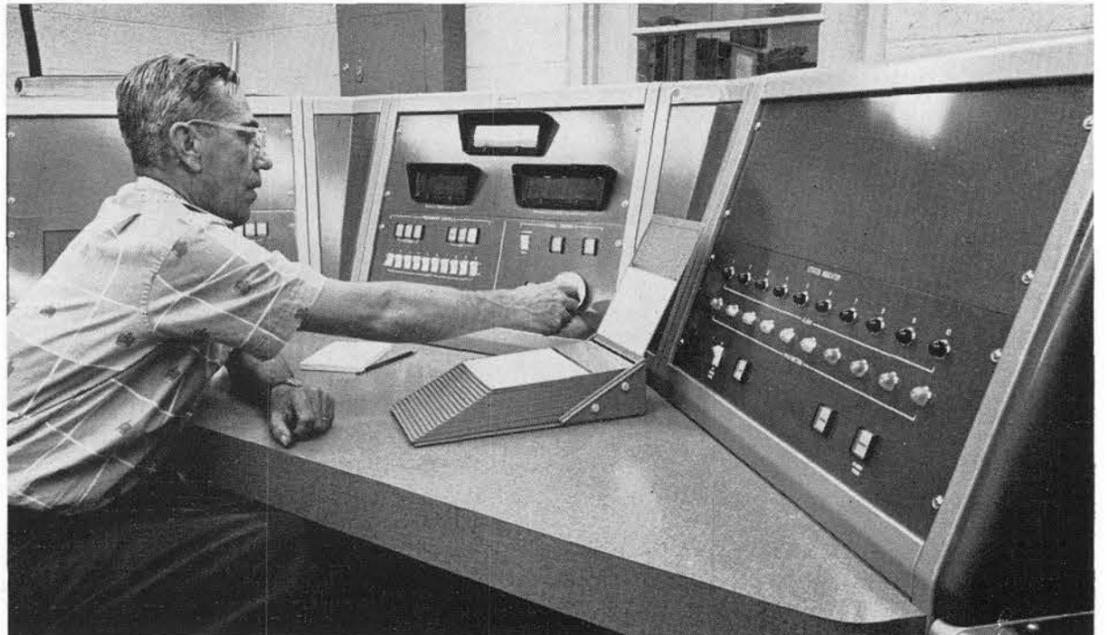
Can Hear Turbines

The system features an intercom for communications from the board to maintenance personnel and also enables the console operator to listen to the sound of turbine and other equipment.

"As far as I know," Mr. Elskes says, "this is the only installation of its kind in the country. Automatic monitoring is widespread in plants with only one major building, but Sandia Laboratory will have central monitoring from 27 locations when the system is complete."

More than five years were spent planning the system. The original feasibility study was conducted in 1957. Mr. Elskes worked out the design criteria and requirements of the system. V. O. Easley (4543) was Plant Engineering Department project engineer.

"When the system is completed," Mr. Elskes says, "we will also have all the power sub-stations in Tech Area I connected. This will enable automatic monitoring of the circuit-breakers of the sub-stations as well as recording the power loads of the stations."



FROM THIS CONSOLE located in Bldg. 887, air conditioning and heating equipment in Bldg. 802 is monitored. System, currently being installed in Bldgs. 880 and 894, will eventually include all ma-

major buildings at Sandia Laboratory. At console above, is W. C. Elskes, supervisor of Electrical, Refrigeration, Air-Conditioning Division 4511, originator of the central monitoring system.

Sandia's Safety Record

**Sandia
Laboratory
HAS WORKED
2,320,000 MAN HOURS
OR 67 DAYS
WITHOUT A
DISABLING INJURY**

**Livermore
Laboratory
HAS WORKED
225,280 MAN HOURS
OR 45 DAYS
WITHOUT A
DISABLING INJURY**