

SAMPLER UNIT designed by Aero Design Division 7423 is inspected prior to performance testing in one of the 10,000 cu. ft. vacuum tanks of the Wind Tunnel by Ernest W. Hall (4413), a project designer. The unit is designed to obtain samples of nuclear particles out of the atmosphere from between 230,000 ft. and 100,000 ft. The eight-ft. folding arms of the sampler contain filters and rotate during descent.

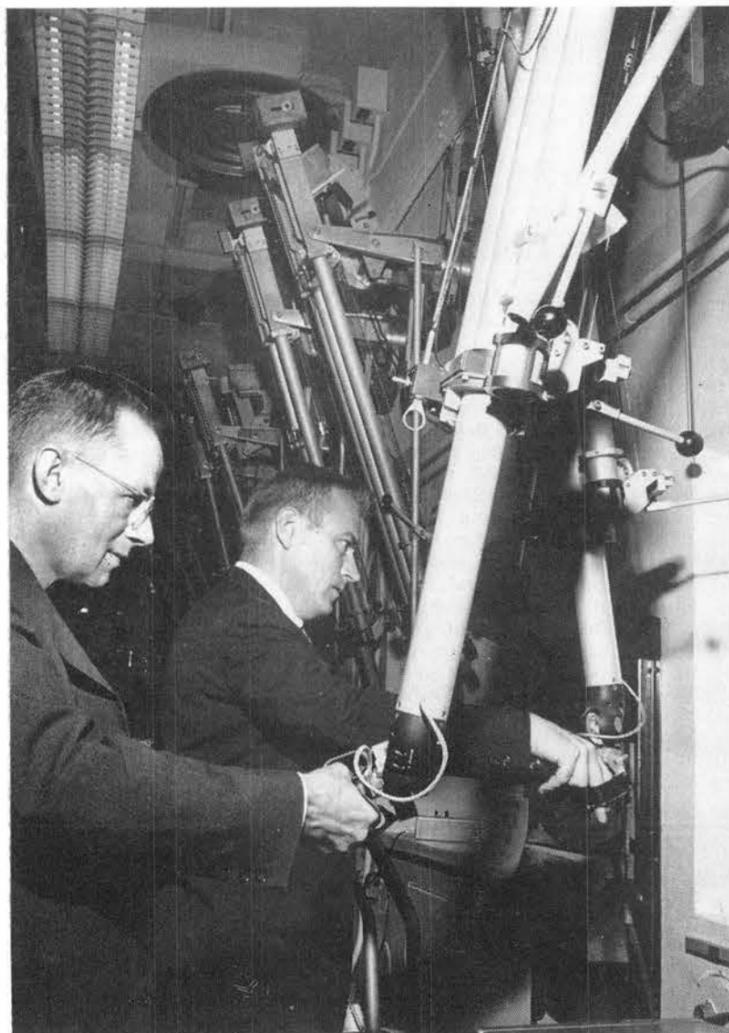
Livermore Laboratory Payroll For FY 1963 Over \$8 Million

Sandia Corporation's payroll in Livermore for the fiscal year 1963 amounted to more than \$8 million, with an average of 998 employees on the roll during the year.

Assets of Sandia Corporation at Livermore amounted to \$15.6 million, an increase of almost \$2 million over the previous fiscal year.

These figures represent undepreciated values of buildings and facilities.

All of the plant assets are the property of the Atomic Energy Commission but are used and operated by Sandia Corporation in research, design, and development work for the AEC.



VISITING SANDIA LABORATORY last week were two executives of the Engineering Research Center, Western Electric Company, Princeton, N. J. Viewing irradiated materials at the SERF reactor are, from left, G. R. Simmons, Director, Research and Development, and James A. Hosford, Director, Mechanization R&D. The visitors were here for technical briefings and also toured Sandia Laboratory research facilities.

Tomorrow's Solar Eclipse Has Dangers for Careless Viewers

Tomorrow, at approximately 1:14 p.m. (MST), there will be a partial eclipse of the sun. There is absolutely no safe way to look at it directly. Medical authorities agree that smoked glass, exposed photographic film, welder's goggles, and dark glasses are not adequate protection against the incurable retinal burns that may result from the infra-red rays of the sun.

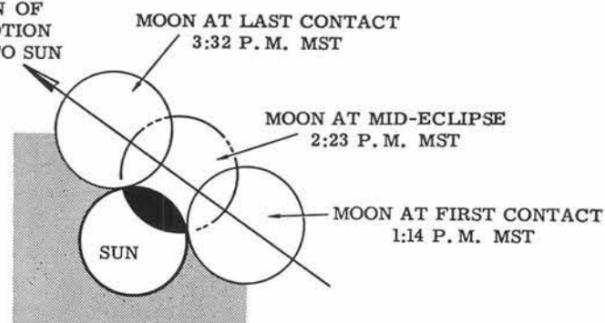
After the 1959 solar eclipse seen in Australia, 170 persons were treated for this type of ocular damage. The burns cause no pain at the time, but permanent damage can occur, leaving the person with the central part of the field of vision obscured.

There are various methods of indirect viewing of the eclipse. Life magazine in last week's issue described a simple method of using a cardboard box over the head with a pinhole in one end. The image is projected inside the box onto a piece of paper at one end. A simple method, similar to this, is to use a piece of cardboard with a pinhole and project the image onto a white piece of paper on the ground.

During the eclipse in Albuquerque, the sun will be almost directly overhead. The paths of the moon and sun will make their first contact at approximately 1:14 p.m. It will probably be 1:17 or 1:20 before the "bite" becomes noticeable. The moon will traverse the upper portion of the solar disk from right (west) to left (east) with the mid-eclipse occurring about 2:23 p.m. Last contact will be at 3:32 p.m.

Another method of viewing the eclipse indirectly and achieving a larger image is to mount a monocular, binocular, telescope,

DIRECTION OF MOON'S MOTION RELATIVE TO SUN



PARTIAL ECLIPSE of the sun as viewed in Albuquerque tomorrow afternoon will proceed as diagrammed. Under no circumstances, look at the sun directly. Permanent damage to your eyes may result from infra-red rays you can't even feel, which destroy delicate retinal cells.

or opera glasses in a piece of cardboard to surround the large lens of the instrument. By pointing this end at the sun, the image can be focused onto a white piece of paper on the ground. Here again, be careful. Do not look directly at the sun through any kind of optical instrument. The instrument itself may be damaged by heat if the exposure is prolonged.

Photographers who might want to make pictures of the eclipse should not focus through their cameras. Set the lens at infinity. Use a ND 6 filter over your lens. (Two thicknesses of black and white film fully exposed and fully developed for maximum density equals a ND 6 filter.) Unless a long focal length lens is used, the image of the eclipse on the negative will be extremely small.

A recommended setting to use (with the ND 6 filter) is f10 at 1/60th on ASA 200 film. Set your camera at f10 at 1/30th for Verichrome Pan film.

A special broadcast on the total eclipse will be presented at 3 p.m. tomorrow on Channel 13.



SIMPLE AND SAFE DEVICE for viewing Saturday's partial eclipse of the sun is shown above. For best results, cut a square out of a piece of cardboard, tape aluminum foil over the hole, and then punch a tiny pin hole in the foil. Used as shown, the image of the eclipse can be viewed in the shadow of the cardboard square.

Military Career of Bill Jackson Has Never Had Lack of Variety

Bill Jackson has the distinction of having served in all four branches of the U. S. Military.

Bill (who is in 4253) started his military career in 1934 when he joined the Marine detachment of the New York Naval Cadet Corps. He was stationed at Lakehurst Naval Air Station, N. J., for training in 1938.

"In 1938, I joined the regular Marine Corps and went to Guantanamo Bay, Cuba. We used to make patrols on horseback," Bill recalls. "I imagine Guantanamo has changed a lot since those days."

On Dec. 7, 1941, during Pearl Harbor, Bill was in a field hospital in North Carolina with an ear infection that later required his discharge from the marines in 1942. He went to work in Norfolk Navy Yard, Va., and joined the Virginia State Militia and the State Guard Flying Corps. He also served as a warrant officer in the Civil Air Patrol, and later enlisted in the U. S. Army Air Corps.

"My first Air Corps station was at Clovis, N. Mex., with the 28th Bomb Group," he continues. "That was in 1946. Then, we went to Alaska to test the effects of cold on B-29 aircraft. It was a far cry from Guantanamo Bay."

By 1949, Bill had transferred to the Army to attend Officer Candidates' School. With the outbreak of the Korean conflict, his unit was alerted; within four weeks, he found himself in Korea. "We

landed there in September 1950, several weeks before the Inchon invasion," he says, "and we served as a support group." Bill received seven battle stars and two unit citations for combat in Korea.

Later, he returned to Headquarters, Sixth Army, in California, where he was honorably discharged in 1952.

In 1957, Bill came to work at Sandia. He joined the Bernalillo County Citizen's Unit as a patrolman in 1958, was promoted to first lieutenant in 1959, and is presently serving as a regular deputy sheriff. And he served as a justice of the peace in 1960-61.

And now Bill has joined the Naval Reserve. On June 23, 1963, he enlisted as a chief petty officer.

"So far, it's been quite a life," Bill concludes, "always full of unusual little sidelights. For example, I sat down the other evening and figured up that I've served and worked on some 35 different ships. But before my enlistment in the Reserve, I'd never been in the Navy."

M.I.T. Alumni Elect

B. C. Caskey (1513) is the newly-elected president of the MIT Club of New Mexico. Alumni of Massachusetts Institute of Technology also elected F. I. Magee (3453) vice president.

The group meets every second Thursday of each month for lunch at the Coronado Club. Persons who attended MIT are welcome.



SOME PATCHES, some medals, some service stripes, and other awards are mementos of Bill Jackson's career in the Armed Forces. In the picture-within-a-picture, he wears the uniform of Chief Petty Officer, USNR, but he's worn many others in past years.

Sandia Speakers

A. W. Snyder (5320), "Radiation Induced Conductivity in Dielectric Materials," Dielectrics in Space Symposium, June 25, Pittsburgh, Pa.

J. E. Shirber (5151), "The Effect of Pressure on Open Fermi Surfaces," Gordon Conference on High Pressure Research, June 24-28, Meriden, N. H.

Editorial Comment

Freedom Is Not Free

By John Edgar Hoover
Director, Federal Bureau of Investigation

In our nation, freedom is a hallowed cause — and rightly so. It is the topic of high-level conferences. Congress enacts legislation to protect and to preserve it. High school students write essays on it. Most Americans can tell you what it is. Few, however, stop to consider the one thing it is not. It is NOT FREE.

Since 1776, thousands of Americans have paid the supreme sacrifice bravely and without question so that freedom might reign in our land. Our country has never failed to meet the price demanded of a nation besieged from within or without by enemies of democracy. For true Americanism, the cost of freedom is never too high.

Sacrifices which citizens are called upon to make today are small indeed when compared with those of our forefathers assembled in Philadelphia 187 years ago. Yet, we see "patriotic" backsliders shirk their responsibilities to their country at every opportunity. Through lethargy or indifference or because it is considered "boorish" in some circles, certain segments of our society ignore civic obligations, nimbly skirt jury duty, snub public service and avoid situations which require their participation as witnesses. They "stand" for, or against, many things, but are responsible for none. They are deadheading on democracy at the expense of their fellow men.

Ours is a system of government by law. The Nation's welfare, progress and security depend on effective enforcement of law. Presumably, there should be no question as to where the public's sympathy lies. However, many local law enforcement officers and representatives of Federal investigative agencies daily feel the sting of citizens' refusals to help in matters involving the safety of their own communities or the security of the country.

When the ranks of decency and morality in America grow thin and listless, crime and other sinister forces flourish. During 1962, over 2 million serious crimes were reported to police, a six per cent increase over 1961. A major cause of this increase is public apathy, a refusal by our society to face reality. The time may be near when the public must actively support adequate and effective law enforcement or be overwhelmed by a criminal jungle. Here lip service will not suffice.

The path of patriotic and civic duty leads to personal glory for only a few, but it does lead to the survival of the American way of life — liberty, freedom and the pursuit of happiness. The task is a common cause. There can be no exception for special interest groups or laggards.

Americans who are prone to shirk their responsibilities to our great Nation might think about these things — to oppressed people who cry out for freedom, the responsibility of preserving it would be a privilege, not an inconvenience.

"Closing The Gap"

According to Rep. Wright Patman of Texas, these are just a few of the things the United States would have to do to "catch up" with Russia:

- Knock down seven out of every 10 homes.
- Cut all paychecks by 75 per cent.
- Abandon 95 per cent of our cars and trucks.
- Disconnect nine out of every 10 telephones.
- Sink eight out of every nine of our ocean going vessels.
- Scrap 40 million TV sets.
- Rip up two out of every three miles of railroad tracks.
- Scrap 60 per cent of our steel capacity.
- Close seven of every 10 producing oil wells.
- Ship 60 million Americans back to the farm.

Welcome Newcomers

July 1-15

Albuquerque	
Carl J. Benning, Jr.	1443
Albanita Downey	4623
Donna S. Eaton	3451
Julia A. Fewell	3455
Jill F. Hakard	4212
Shirley M. Harper	3126
Grace A. Moen	3126
Alice E. Moore	3126
Merideth L. Payne	3126
Doris W. Price	3427
Larry L. Ream	3427
Ernest Sanchez	3462
Francis C. Swanson	3126
Richard K. Traeger	1111
Joseph E. Trujillo	3428
Arizona	
Robert V. Baron, Phoenix	1422
California	
Donald P. Peterson, Los Altos	5422
Delaware	
Roger A. Phillips, Wilmington	4412
Indiana	
Malcolm R. Fisher, West Lafayette	7251
Thomas R. Gardner, Lafayette	1322
Kentucky	
Allan D. Flay, Covington	1111
Michigan	
Henry Tolsma, East Lansing	1113
New Mexico	
Rose Marie Wood, Las Cruces	4113
North Carolina	
Larry M. Lee, Raleigh	1442
Ohio	
Robert L. Courtney, Cincinnati	1112
Jerry L. Endsley, Cuyahoga Falls	4151
Kenneth R. Grothaus, Cincinnati	1323
James P. Rybak, West Lake	7251
Utah	
Thomas A. Budge, Jr., Logan	1332
Paul T. Lubeck, Salt Lake City	1442
Virginia	
Carl G. Murphy, Martinsville	1414
Washington	
Barry A. Bodhaine, Tacoma	2344
• Denotes Rehired	

W. R. Perret to Present Paper In Switzerland

William R. Perret, of Sandia's Underground Physics Division 5412, will journey to Zurich, Switzerland on July 20 to present a paper before a symposium, sponsored by the Swiss Office of Civil Defense, on Scientific Problems of Shelter Construction. Title of his paper is "Free Field Ground Motion Produced by Explosions."

Bill will make the trip as a guest of the Swiss Government. The symposium will be attended by other scientists from the United States, Switzerland, Germany, and many other European countries.

He has been at Sandia Corporation for 12 years. Previously, he worked as a geophysicist for the U.S. Army Corps of Engineers and for Tennessee-Eastman at Oak Ridge during the war.

Bill studied physics at MIT and did graduate work there and in Berlin and Munich, Germany.



C. C. BATES (1432), right, receives help from Jerry Wallace (3423-5) in submitting test reports on electro-magnetic relays for inclusion in the Interservice Data Exchange Program to which Sandia Laboratory belongs.

DOD Data Information Exchange Helps Contractors Avoid Duplicate Tests

Sandia Laboratory has become a participant in the Interservice Data Exchange Program (IDEP), a Department of Defense service which provides for an interchange of information on testing of commercially - available components and parts.

IDEP is designed to avoid repetition of tests. The 120 plus participants are predominantly prime or major sub-contractors engaged in missile, space, and related programs. Like Sandia Corporation, they are parts "users" rather than parts manufacturers or vendors.

The unclassified information is made available on standardized Report Summary Sheets which have attached microfilms of the entire test report. The average delivery time from contributor to

receiving participant is under three weeks. At Sandia Laboratory the reports are maintained by the Specifications and Catalog Branch Library in Bldg. 828, where a microfilm reader-printer is available. Extra Report Summary Sheets (without the microfilms) are distributed to interested Sandia engineering groups.

Lee Parman (3421), who is IDEP Contractor Data Coordinator for Sandia, noted, "Because the information on the report summary sheet is so complete, it's easy for an engineer to tell at a glance whether the microfilmed full report would include the data he is seeking."

A monthly report, which lists all previous test reports from the start of IDEP, is distributed to all interested persons. Although the tests on the part may not be exactly the same as the test Sandia engineers propose to make, often the IDEP information permits simplification of scheduled tests.

IDEP is a two-way program, and Sandia, as well as other contractors, must also contribute information to make the system work.

C. C. Bates (1432) and A. B. Draper (2413-3) have been Sandia's top contributors to date. Mr. Bates' work is with electromagnetic relays. Normally he writes the test request and orders the items to be tested. Roland Russell (7332-3) performs the tests and provides test data, photos, and other supporting material. Mr. Bates then prepares the draft of the IDEP Summary Sheet and provides a reproducible copy of the testing report. These are submitted to Jerry Wallace in Technical Information Section 3423-5. The information is edited, retyped, and moves through the normal clearance procedure for outside

distribution of Sandia-originated reports. Before being sent to IDEP, a copy of the test results is sent to the manufacturer of the item tested.

Mr. Draper's tests have all been on power supplies.

Forest Fire Danger Great In This State

New Mexico is undergoing one of the driest summers in history, according to the U.S. Forest Service. As a result, the danger of forest fires is greater than ever.

All of us who enjoy summer activities in the beautiful recreation areas of the State have a continuing responsibility: Now, more than ever before, be extremely careful with fire.

The Forest Service asks that the following rules be observed:

1. Camp fires must be restricted to camp sites. Charcoal is not to be burned outside of campgrounds.
 2. Permits may be issued for fires in other locations. Forest Rangers carefully check areas where permits are issued.
 3. Smoking is allowed only on paved highways.
 4. Motorists should use ash trays in their cars and not throw lighted cigarettes out of car windows.
 5. It would be best not to start camp fires unless absolutely essential. Douse camp fires thoroughly with water before leaving.
- Remember, a spark blown from a camp fire or a cigarette thrown from an auto can start a major forest fire, which could destroy our recreational areas as well as our vitally important natural resources.



Lucille Farmer (7242)

Take a Memo, Please

No matter how routine an operation becomes, give it your full attention and avoid distractions.



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The Privilege of Service

Schweitzer Sets Example of Man's Compassion for Man



has never ceased to observe them. His immense capacity for work and the exceptional range of his interests have both been determining factors. He has been, for instance, a great savant of music. Yet, the material rewards of his recitals and recordings have invariably been made over to the hospital which he built with his own hands.

All that fosters and encourages life is good; and all that destroys and mutilates it is evil, Schweitzer says. "A time will come when religion and ethical thinking will unite. This we believe, and hope and work for, maintaining the belief that if we make ethical ideals active in our lives, then the time will come when peoples will do the same."

For all mankind, Dr. Albert Schweitzer is an incomparably important human being. Service such as his has rarely been achieved.

Dr. Albert Schweitzer — professor, doctor, musician, philosopher, theologian, humanitarian — has devoted his life energies to service. He abandoned a brilliant career in Europe to found a hospital in Lambarene in Africa. "We must make our lives fit our thoughts," Schweitzer has said. And the core of Schweitzer's thought is "reverence for life." He put himself, body and soul, at the service of his personal laws, and

The Employees' Contribution Plan provides a means for all Sandians to serve, in a small but very important way, the great ideal of the human race: every individual is born with the right to live in dignity. Some require help; their need is great. Through ECP, we do our share.

Service Awards

15 Year Pins



Daniel B. McCarthy 3153 July 14, 1948; Joseph L. Hickey 4516 July 14, 1948; Chris O. Padilla 4413 July 20, 1948; Mavis G. Randle 3421 July 26, 1948



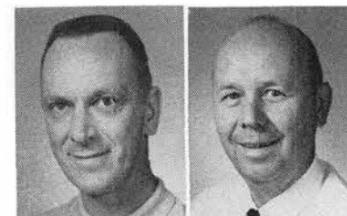
Robert L. Armstrong 2322 July 27, 1948; Richard L. Starkey 4514 July 27, 1948; Abel Lovato 4614 July 27, 1948; Gordon R. Bachand 5420 July 30, 1948



Thomas F. Marker 2421 Aug. 2, 1948; Everett L. Deeter 2440 Aug. 2, 1948; Wallace F. Boyes, Jr. 3462 Aug. 2, 1948



Edwin B. Bergquist 4321 Aug. 2, 1948; Alfredo Fernandez 4573 Aug. 2, 1948; Howard E. Viney 7210 Aug. 2, 1948

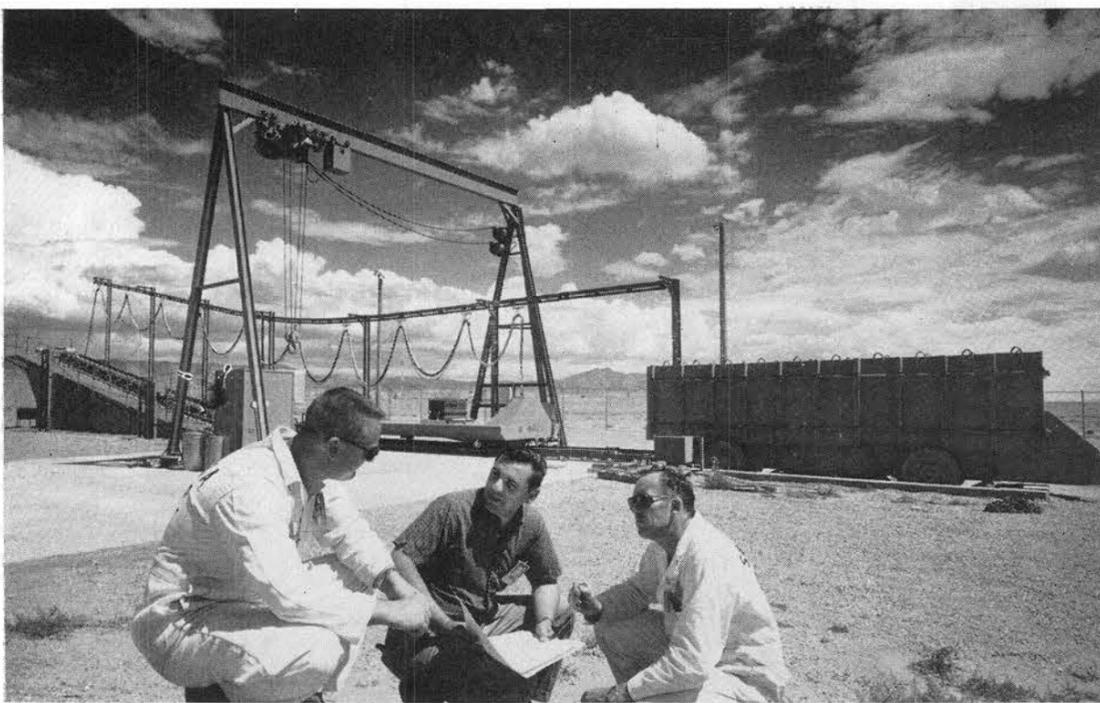


James A. Maxim 7254 Aug. 2, 1948; Bert P. Neuman 1521 July 6, 1948

10 Year Pins

July 20-Aug. 2

William H. Myers 4173, Patricia R. Lerma 4573, George S. Kinoshita 1533, David M. Webb 1541, Grover W. Hughes 7224, Edwin G. McGarvie 7511, James T. Carrell 8143, Wanda S. Bishop 3341, John E. Stang 2543, Raye C. Knoff 4423, Lawrence B. Smith 5414, Paul F. Bahr 2444, Anna D. Michele 4510, C. H. Stockley, Jr. 7432, Frank C. Cheston, Jr. 6000.



DISCUSSING design of Area III Test Ramp Facility, Ogurchak, facility engineer; and Eldon Upchurch. All shown in background, are (l to r) Gerry Gay; Joe

Railway Shipping Shocks Are Duplicated on Area III Tracks

Employees of Sandia, on their way from Gate 1 up "H" Street past Bldg. 807, have probably noted the absence of the test ramp and instrumentation trailer formerly located nearby. It's been replaced by an improved model—this one located in Area III—which offers increased versatility and capacity.

A. L. Stevens (7311-2) was responsible for facility design. He developed design criteria, designed all government supplied equipment including the impact cart and reaction block, and was responsible for general coordination required in building the ramp. Matt Gubbels (7311-1) was preliminary design engineer for the facility.

Tests which are performed on the facility originate in Auxiliaries Development Division 1544, supervised by Paul Syroid. "We believe that the new facility gives us a better test of handling equipment

being shipped by railroad. The facility will provide us with repeatable shocks, and we can now determine the level at which damage to equipment being tested occurs," he said.

Facility engineer for the Area III ramp is Joe Ogurchak, of Systems Shock Testing Section 7325-2. "Many of Sandia's products are transported in rail cars and aboard ship," he said. "Shock loads caused by rail car 'humping' or coupling and near misses on shipboard during combat are simulated in weapon systems and associated handling equipment by the facility."

Predict Movement

The ramp consists of a long section of rails, part of which is laid up a concrete incline. On the track runs a large metal cart, upon which the test item is mounted. At the lower end of the track is a free-floating "reaction block"—a 200,000-lb. block of lead and

steel mounted on rail car wheels which, in turn, rest in deep depressions in the track in such a way that movement of the reaction block can be predicted.

During a test, the cart and mounted test item are pulled up the incline by a winch and cable. When the cart reaches a predetermined distance from the reaction block, the cable separates from the cart and the cart starts its run down the ramp. It impacts on several "springs"—specifically, formed aluminum or lead wedges and cylinders, or expanded aluminum honeycomb shapes mounted on the reaction block. The springs deform under the impact of the cart, and dissipate the energy of the run. They provide a way to control the shape of the shock pulse generated during a ramp test.

Maximum Velocity

"The cart can reach a maximum velocity of 19.5 mph., and it can carry test items weighing as much as 12,000 pounds," Joe explained. "The impact energy of the cart at 19.5 mph. is as high as about 400,000 ft.-lbs. Peak impact force can go as high as 1,500,000 lbs."

Test results such as accelerations, displacements, and strains are recorded remotely by instrumentation installed at the ramp control center in Bldg. 6713.

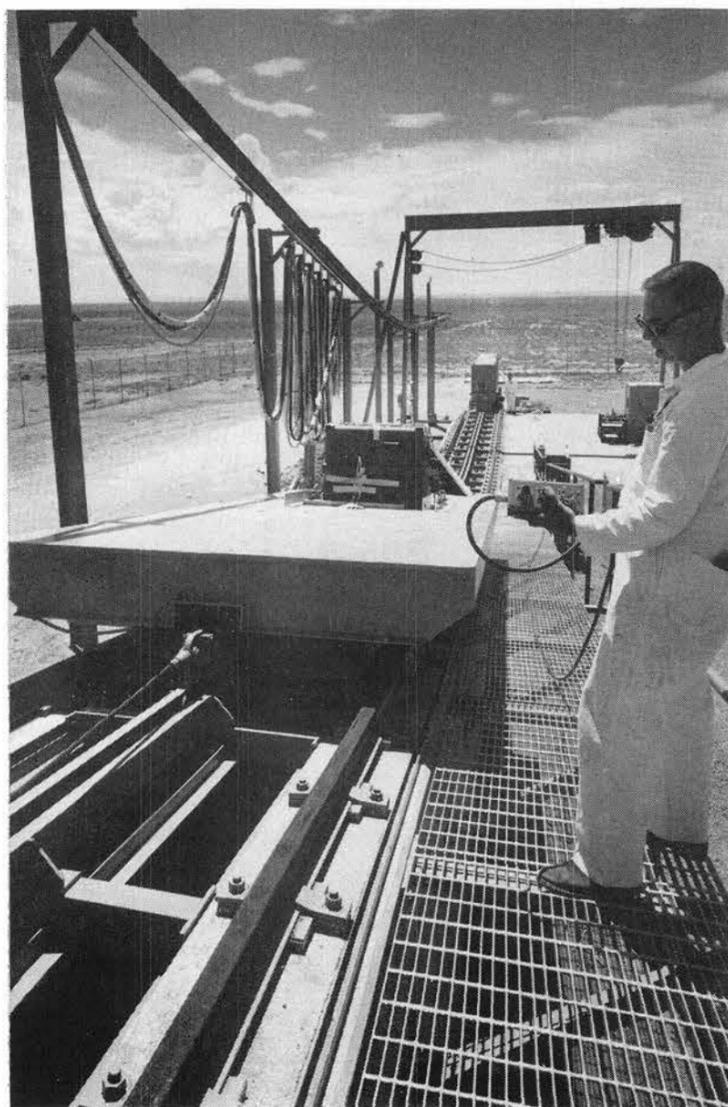
Operation of the ramp facility is a part of the duties of Bob Holt, Gerry Gay, Gerry Tilley, Eldon Upchurch, and Wilson Payne, all of Shock Division 7325. When necessary, two men can perform as many as eight fully instrumented shock tests per day with the new facility, which has been in operation since June.

ECP Fund Pays More Than \$100,000 So Far This Year

Sandia Laboratory employees, members of the Employees' Contribution Plan, have given a total of \$102,836 to the 25 agencies of the United Community Fund and nine other health and welfare agencies to date this year.

As the June checks — totaling \$13,265 — were mailed last week, the following distribution had been made:

	May	Year to date
United Community Fund	\$10,346	\$79,460
American Cancer Society	663	5,229
Bernalillo County Heart Association	543	4,245
Arthritis and Rheumatism Foundation	212	1,649
Albuquerque Association for Mental Health	132	1,020
N. Mex. Society for Crippled Children and Adults	530	4,060
National Multiple Sclerosis Society	92	740
Albuquerque Association for Retarded Children	198	1,584
Cerebral Palsy Association of Bernalillo County	278	2,145
Muscular Dystrophy Association of America	132	1,015
Reserve Fund	132	1,015



CONTROLLING progress of test cart as it moves up incline is Gerry Gay (7325-2). Results of test will be traced by recording oscillographs in instrumentation building nearby. Facility has been operating since June.

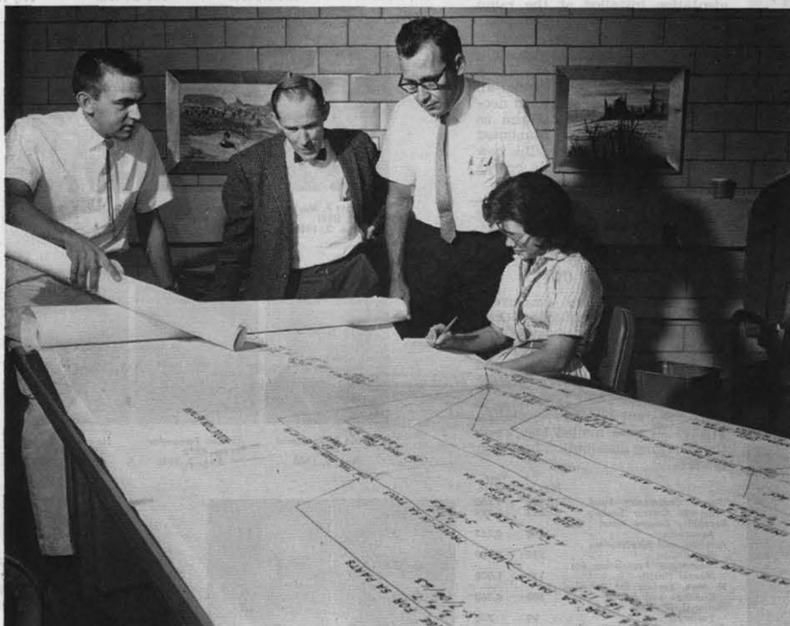
Programming Organization Catalyst to Sandia Lab's Technical Work



LEADING the Programming 2600 activity are, from left, R. W. DeVore, Manager of Systems Programming and Administration Department 2630; L. J. Heilman, Director of Programming 2600; B. H. Bright, Manager of Component Programming and Administration Department 2620; and L. M. Jercinovic, Manager of Engineering and Research Support Department 2640. The organization provides a centralized source of information for Sandia control decisions and planning while performing administrative and logistic support.



PROGRAM PLANNING MEETING is led by J. K. Rutledge (2641), with pointer, as project engineer, production agency representative, and 2600 material procurement specialists discuss requirements for a new weapon program. From left are George Peterson (7418), C. W. Appel (2641), Mr. Rutledge, P. R. Candelaria (2641), H. E. Long (2641), and L. D. Hazellon, representative of Dow Chemical Co., Rocky Flats Division.



TEAM EFFORT is required to continually update a network for a development project. Floyd Harsh (2632), Bill Caskey (1513), and Emery A. Postenrieder (2632) discuss events on the network while Lupe Sanchez (2632) makes notes for new computer cards. Network is processed by computers for rapid, timely reporting.

Compare Programming 2600 organization with a human nervous system: Programming performs the same functions for the technical programs of Sandia Corporation as the nervous system does for the body. Eyes, ears, and fingers are sensory information gatherers. Programming gathers and organizes tremendous amounts of information; for example, network analysis of a weapon program might contain as many as 7000 separate events; and a hardware procurement breakdown for this program could have three times this many items.

Automatic functions such as breathing and circulation are controlled without conscious effort by the nervous system. Similarly 2600 provides a steady stream of materials, logistics support, and administration service to technical groups.

Complete program schedules are planned and executed. Long range planning is performed for both R&D and production.

For field operations, complete logistics support is organized and provided.

In the center of things, the 2600 organization is involved in the budgeting, planning, organizing, scheduling, ordering, coordinating, monitoring, and reporting of Sandia Corporation technical activities.

As the nervous system reports danger signals, so does Programming when programs are behind schedule or when problem areas seem to be developing.

"You might call us a catalyst," L. J. Heilman, Director of Programming 2600, said. "Our job is to accelerate reactions, keep programs on schedule by helping technical groups with planning for a thousand and one details, provide support in numerous ways, but — more important — provide a centralized source of information for control decisions and planning."

"In other words," Mr. Heilman continued, "we put together the complete picture from the important bits and pieces contributed by many — project engineering groups, development organizations, environmental and field testing, manufacturing development, product tester design, production, purchasing, quality assurance, military liaison, other government agencies, the AEC and its integrated contractors."

Another important contribution of Department 2640 is providing logistic and administrative services to field test and environmental test organizations including the administration of service contracts with outside agencies at remote locations. The Department provides complete logistic and administrative support for Sandia in full scale test operations at remote locations. The Department also supports Military Liaison and Radiation Effects field operations.

Engineering and Research Support Division I, 2641, under R. P. Kelly, provides complete financial and administrative services to the 1500 organization. C. C. Fornero and Engineering and Research Support Division II, 1642, provides

Complete Support Package— Department 2640

Department 2640's primary job is to provide a complete support package for General Organizations 1000, 5000, and 7000. L. M. Jercinovic, manager of Department 2640 said, "We free technical people to concentrate on the technical job."

One recent rush development program of a rocket-borne antenna system will serve as an illustration of the type of service performed.



DISCUSSING ALTERNATE PROCUREMENT PLANS for two "C" items, C. A. Davidson (2621), standing, R. H. Keyser (2621), right, and C. M. Gabriel (2542), second from right, consider possible effects on quality, programs, and costs prior to review with Sandia's Purchasing organization and the supplier, M. E. Richards (2621), left, considers budget.

service to organizations 1300, 1400, 1100, and 5100, Engineering and Research Support Division III, 2643, under P. H. Daley, supports organizations 7300, 2300, 5300, and 7200. (Department 2640 is currently reassigning service responsibility to coincide with recent reorganizations in R&D.)

"Since Sandia programs originate with the R&D effort," said Mr. Heilman, "work of this department might be called the first part of the 2600 job. Many components designed for weapon systems are also provided in production by Sandia Corporation. These Sandia-designed and furnished items are called 'C-items.' Ben Bright's Component Programming and Administration Department 2620 has the responsibility for procurement planning for these items and supplying them to the AEC production complex."

Department 2620, then, provides another vital coordinating function. The objective and the responsibility are to develop and implement economical plans for components and for acceptance equipment manufacture and procurement, with considerations for schedule, quantity, and quality requirements.

"Start with the military requirements for a weapon system," Ben Bright said. "These define a system. Break the system into various components. Start the design and development of these devices. Establish a master plan for manufacturing development, pilot production, production, and delivery of the system. Meeting the time scale and the system performance requirements are the uppermost considerations in our planning."

Department 2620 develops jointly, with the Sandia organizations concerned, detailed plans for the production of the items. Key program activity dates are agreed upon. The production plans are initiated as soon as practicable for process and tooling development, product tester development, gage design, and procurement.

Detailed planning for the whole job is a dynamic process. Because the various parts of the system and related equipment are started concurrently while development is still progressing, changes occur and the over-all program needs constant evaluation with appropriate adjustments.

"This overlapping of activities is only a means of telescoping time so that a job can be done as quickly as possible," Ben said. "In addition to coordinating these new component development jobs, our department coordinates all the C-item components in production."

"We evaluate potential production interruptions or rate changes at commercial suppliers to determine probable effects on cost, schedule, and quality. We make recommendations to Sandia management and to the AEC of courses to be taken. The actions may take such forms as authorization for advance build, reduction of manufacturing rates or sources, adjustment of build rate, etc. Every step requires coordination with other groups."

Department 2620 has the responsibility to negotiate operation procedures and to establish channels between Sandia and other integrated AEC contractors relating to interagency sales, procurement, and transfer of materials and facilities. The Department also maintains a "customer relations" activity for service to government agencies, commercial suppliers, and others who make a wide variety of requests for material from Sandia. This activity and C-item programming is centralized in Program Planning, Component Materials and Customer Relations Division 2621 under C. F. Selby, Jr.

"Our most significant contribution is a two-part activity," Ben said. "We have the responsibility of authorizing and controlling expenditures for Sandia-supplied materials to the AEC production complex. This is a detailed budgeting, planning, and monitoring job. Along with this, we provide the AEC and integrated contractors with planning information on components and acceptance equipment. We compile, maintain, and publish appropriate reports reflecting the status and outlook during the development and production phases. These reports provide Sandia management with information from which engineering and administrative decisions are formulated to meet program objectives."

C. M. Abernathy heads Production Ordering, Engineering for Manufacturing Support Division 2624, which performs a support activity for the Manufacturing Development Organization 2500 similar to the support provided to R&D groups by Department 2640.

Procurement management describes the service. This is providing the technical groups with administrative service and the material needed to perform their job. It involves writing requisitions, negotiating integrated contractor purchase orders, and following through to get the material to the place needed at the time specified.

Some of the men who perform the job are administrative staff assistants, order analysts, and expeditors. These Sandians work with their assigned organizations to relieve technical people from the detail work of procurement, movement, and delivery of material. With years of experience on the job, they also help plan budgets and control commitments against those budgets.

Tester and Facilities Administration Division 2625 under G. L. Morrisroe, provides product acceptance equipment planning and administration including budgeting for, authorizing, and coordinating procurement and support to the 2400 organization. Further, he has the important job of keeping track of Sandia Corporation facilities used by the commercial suppliers and other agencies. These facilities include production tooling, test equipment, materials, and other facilities used in the production of Sandia components.

"So far," Mr. Heilman said, "we have discussed some of the highlights of the 2600 job in R&D and Component Development. The third Department of 2600—System Programming and Administration Department 2630, under R. W. DeVore—affects many technical activities of Sandia Laboratory through network analysis functions."

Network Analysis— Department 2630

"But more important," Mr. Heilman continued, "network analysis creates the kind of planning required to define a program thoroughly, to determine the thousands of separate tasks that must be performed, and to analyze the inter-relationships of these tasks. Network analysis also provides a systematic method of pinpointing and control of problem areas through review and action by the responsible project managers."

Department 2630's mission is to coordinate total system planning, to monitor system activities, and to predict the probability of meeting program requirements and schedules.

"Here Again," Bob DeVore said, "we help the technical people perform their job. We provide a vital coordinating function that pulls the total project together."

At the start of a new weapon project, a "work break-down" meeting is held and the assignment of planning responsibilities to various project groups is made. The meeting is followed by many smaller meetings as the 2630 staff starts building the network of separate events necessary to accomplish the program objectives. This staff is supervised by J. E. Anderson, E. M. Irving, and J. R. Meikle.

A device is committed for proties and keep dynamic, accurate production by a certain date. The project group identifies the events of their portion of the project and estimates the time required. These estimates become part of the network along with the estimates on all of the other project groups. The network defines the optimistic, most likely, and the pessimistic time for each event. When these data are processed by the computer groups, the calculations provide the basis for establishing a program completion date.

"In this way the project is structured by network analysis," Bob said. "There might be as many as 7000 events on a single system and these must logically mesh to produce a complete system time plan."

The 2630 staff works with the engineering groups or production agencies responsible for specific elements, and, as the network shapes up, the staff suggests changes or alternate solutions or switching of resources to insure planned completion.

The critical path is the series of necessary accomplishments, coupled together, which will take the longest period of time and therefore control the program. Once the project plan is set, and with the aid of Sandia's computers, Department 2630 can issue progress reports as information on developments is fed in.

Department 2630 analyzes this data for engineering and production performance and forecasts the probability of accomplishing overall schedule objectives. The staff identifies potential problem areas and recommends and coordinates actions necessary to satisfactorily resolve the problems involved. The Department issues a weekly "Trouble Item Report."

Planning and monitoring are major functions of the Department. The staff calls meetings to discuss problem areas and as aspects of the program change, the network is altered to reflect the changes. Comprehensive reports are provided to the project groups, Sandia management, integrated contractors, and the AEC.

"To effectively plan, follow, and report the progress of weapon programs through the various phases of development and production requires our staff to have a broad knowledge of Sandia Corporation organizational structure," Bob said. "Also required is a thorough knowledge of activities of technical organizations, weapon systems, and test and stockpile maintenance requirements. They have to be familiar with design and manufacturing techniques, drawings and engineering release systems, production scheduling operations, methods and techniques, plus having a knowledge of the responsibilities and capabilities of other agencies within the AEC complex. In a sense, we become a part of all these activity-channels of communication functioning."

Department 2630 makes final schedule commitment reports for Sandia Corporation which are submitted to AEC/ALO and the Division of Military Application. The program planning data provided by Department 2630 are used by the AEC, integrated contractors, and Sandia Corporation. "Programming," Mr. Heilman concluded, "assists in organizing the energies of Sandia Corporation to perform a complex and many-faceted mission."



INSIDE FIELD TEST TRAILER, John Archuleta, Art Pino, and Frank Rivera (all 2643) check equipment needed for an upcoming Field Test operation. Division 2643 provides logistic and administrative support to Field Test operations at Sandia Laboratory and at remote testing sites.



PROCUREMENT LEAD TIMES to meet network schedule are discussed by Dick Ashmore (1324-2), and Ed Newfield (2642-1). Procurement events will be inserted into the network to allow necessary amount of time for assembly requirements of a component under development.



WITH PERSONNEL of Component Ordering and Manufacturing Development Support Division 2624 in background, D. H. Hesselbarth and R. F. Thomas discuss ordering material required to meet a production schedule while M. L. Cooper, right, checks budget figures with the project engineer. Order analysts, expeditors, and budget accountants compose Division 2624 support teams which support Manufacturing Development.

I. C. Ellicott Will Retire July 31 From Livermore Lab

Irving C. Ellicott will retire the end of July after seven and a half years with Sandia Corporation. Irv came to Sandia at Albuquerque in November 1955, transfer-



I. C. Ellicott

ring to Livermore Laboratory in March 1960. He is a draftsman in Mechanical Design Drafting Section 8114-5.

Following his retirement, Irv and his wife will move their trailer home to Healdsburg, Calif., about 60 miles north of San Francisco on the Russian River.

"We'll be able to relax there and perhaps take in a little fishing," he said. "It will also be a good spot for me to teach horseback riding."

Sanado Club Plans Annual Member Drive

The Sanado Women's Club will hold its annual membership drive at a free punch party Aug. 6 at 1:30 p.m. at the Coronado Club.

Members and guests will be able to join a number of interest and activity groups set up for the coming year in the following areas: art, bowling, bridge, drama, chorus, golf, gardening, foreign foods, horseback riding, modeling, physical fitness, skiing, and social living.

Wives of Sandia Corporation, AEC, or ACF employees are eligible to join the Sanado Club after becoming members of the Coronado Club. Further information is available from Maurine Romme (AX 9-8765) or from Helen Baylor (AX 9-3915).

D. L. Cochran Retires From Livermore Lab At End of Month

Retiring the end of July will be Dewey L. Cochran (8121-1) who has been with Sandia Corporation for 16 years, working in environmental testing for the entire period.

Dewey joined Sandia at Albuquerque in February 1947, where



D. L. Cochran

he was a section supervisor in environmental testing for nearly nine years. He transferred to Livermore Laboratory in May 1957.

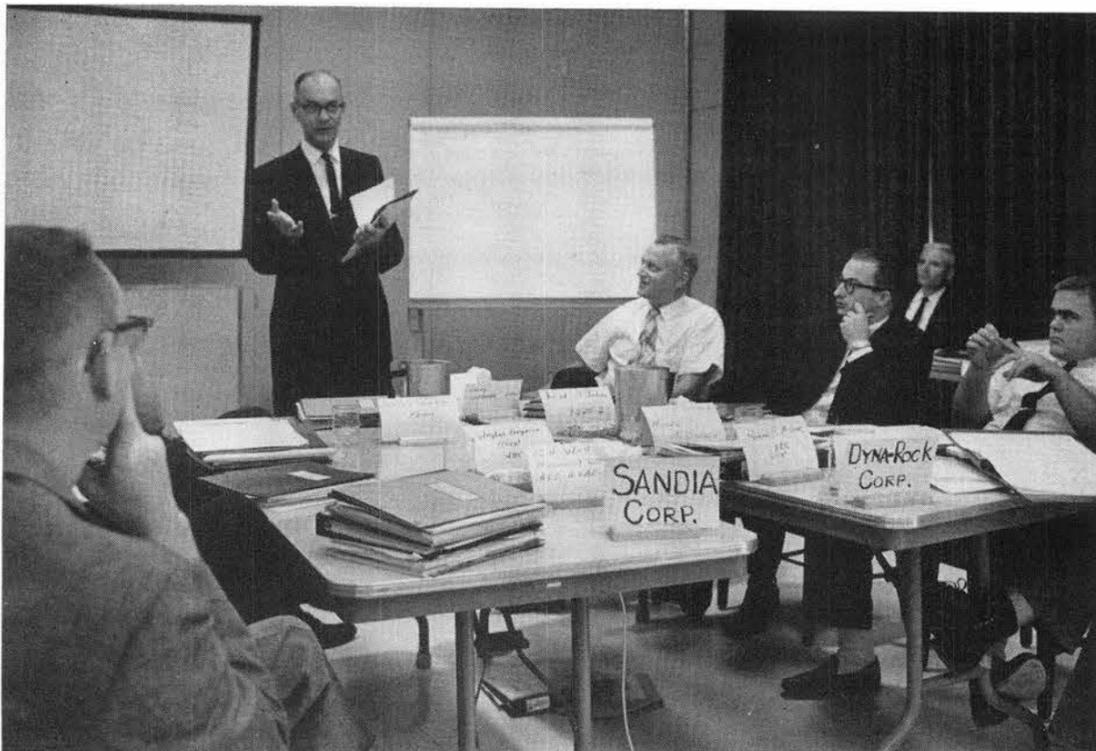
Following his retirement, Dewey and his wife will move to Roanoke, Va., his home town. "We're looking forward to some leisure time and going back east again," he said. "I enjoy meeting people so I'll probably become active in local community affairs." For recreation, Dewey enjoys a game of horseshoes.

He has a son residing in San Jose, Calif., and a daughter living in Norfolk, Va.

Sandia Photographers Show Prints at Santa Fe Exhibit

Two prints by Bob Ezell and Bill Geck of Industrial Photographics Division 3465 were part of a photography exhibit shown at the Fine Arts Museum of New Mexico in Santa Fe recently. The Sandians' photographs had previously been selected as honor prints during the 1963 convention of the New Mexico Professional Photographers Association.

The display in the Fine Arts Museum was held June 30-July 16 and marked the first time that photographs by professionals were shown at the museum.



WORKSHOP CRITIQUE is made by Dr. Herbert R. Kroeker, Ohio State University, at a recent session of a Procurement by Negotiation training course for Sandia Purchasing staff. The five-day program has recently been completed by about 100 personnel of the Purchasing organization, AEC, and other agencies.

Mock Negotiation Session Gives Buyers New Contract Administration Skills

"Procurement by Negotiation," second phase of a three-part training program for the staff of Purchasing Organization 4300, was wrapped up last week. Featured speaker was Dr. Herbert R. Kroeker of the Ohio State University Defense Management Center.

Some 100 Purchasing staff people have completed the training program to date along with Sandia R&D personnel, men from AEC, Los Alamos, and Bendix, Kansas City.

The course provided orientation in Sandia's contracting system and principles of contract negotiation. In addition, workshop sessions were held to practice negotiation skills and contract administration.

"Negotiation," Dr. Kroeker told the group, "is a tool for decision-

making by two parties or groups who represent opposed viewpoints of interests concerning the subject matter at issue, but who are also interested in reaching a meeting of the minds for a certain period of time by a specialized method of communication called bargaining."

Dr. Kroeker is director of a reaction team presently developing a course for the U. S. Air Force in Advanced Cost Estimating and Analysis.

Men who attended the course were organized into various teams to represent purchasers of a simulated weapon system and representatives of manufacturers bidding for the job. Emphasis was placed on pre-negotiation planning and analysis.

Dr. Kroeker critiqued the sessions and the trainees also performed as evaluators.

"Negotiation is the most advanced form of purchasing skill," K. S. Spoon, Sandia Corporation Purchasing Agent 4300, said. "It is the art of arriving at a common understanding through bargaining of the essentials of a contract such as delivery, specifications, prices, and terms. It is our responsibility to develop new skills and in other ways to continue to improve our effectiveness. This training program was designed to help achieve staff development goals."

The training program was conducted by Ken Krogh of Staff and Management Development Section 3131-1, Ralph R. Davies, supervisor of Purchasing Practices Section 4332-2, and G. H. Welch, Jr. (4332-2).

R. A. Ledogar (6030) discussed legal aspects of contracting.

You Too Can Have A Trim Waistline Says Expert

Sandia Laboratory Security Inspectors' interest in the new physical conditioning program continues at a high level. But it is not only the Sandia men who want to be physically fit.

Everyone seems to be interested in the trim waistline.

For good reason too, medical authorities agree. The American Medical Association has declared: "Fitness implies the ability to function at one's best level of efficiency in all of his daily living. Intellectual and emotional,

as well as physical, capacities obviously are involved. And of course, physical exercise alone cannot provide all of these. But along with the right work, proper food, enough rest, avoidance of excesses, and needed medical and dental care, exercise can help to keep you at your level best."

Individual good health cannot be provided by the community or the company; it is a do-it-yourself job. Most authorities agree that regular participation in some physically active recreation plus a daily exercise period works well for most adults.

At Sandia Laboratory about 4000 employees participate in one

or more of the company-sponsored recreation activities. Table tennis leads as the most popular sport, with some 2000 employees participating during the noon hour. Horseshoe pitching, also during the noon hour, has about 900 regulars.

After hours, bowling, with 600 participants, leads the list. About 280 employees are active in golf, 120 play football, and 225 participate in softball and basketball. Others play volleyball, tennis, and badminton.

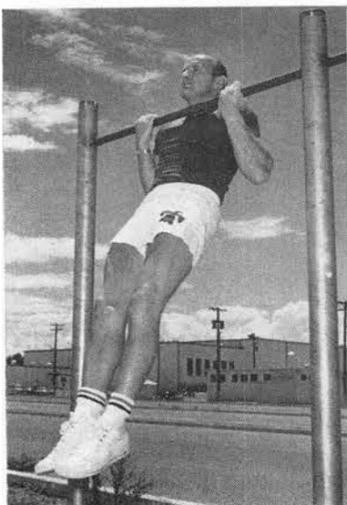
The other part of physical fitness, daily exercise, can be accomplished in about fifteen minutes.

Frank Treon (3242), who coordinates the physical conditioning program for the security force, recommends the plan described in a booklet first published by the Royal Canadian Air Force and now adopted by the U. S. Army. The book, "Exercise Plans for Physical Fitness," has been published by Pocket Books, Inc., 630 Fifth Avenue, New York 20, N. Y., and has received widespread circulation in the United States.

"Check with your doctor before starting any strenuous exercise program," Frank says. "With his O.K., this exercise plan will work for most people. It takes only

11 minutes a day for men and 12 minutes for women. Most people start feeling and looking better in a couple of weeks."

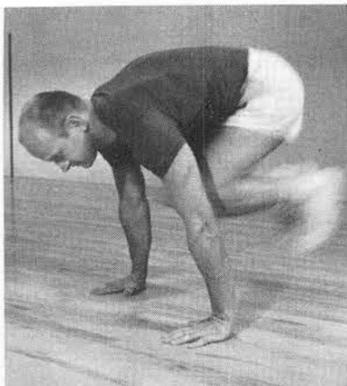
In addition to the exercises described in the booklet, Frank recommends a brisk walk as a very good exercise. "Don't confuse a stroll with a walk," he says. "Stand tall and walk rapidly until you start breathing hard. This is one of the best ways to exercise."



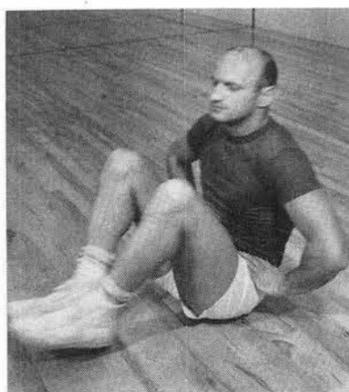
PULL UPS — An adult male in top condition can do 20 of these in rapid sequence without tiring. Grab bar with palms facing in. Don't kick or swing. The idea is to build strength in arms and shoulders, and in chest muscles.



PUSH UPS — Hold body rigid, let arm and shoulder muscles do the work. Don't arch your back. Do as many as you can at a rapid rate. You get better as you go along. All of these exercises are demonstrated by Frank Treon (3242).



SQUAT THRUSTS — Start standing, drop to squat position with both hands on floor. Then thrust legs out behind you. Go back into squat position and stand up. Repeat as many times as you can. Improves cardio-respiratory condition and helps build up agility.



SITTING TUCKS — Sit with hands on hips with feet together off the floor. Bring knees into chest and straight out again without touching the floor. Average adult male should be able to do 58 sitting tucks without stopping to rest.



RUNNING — Combined with fast walk is a very good basic exercise. Sandia Security Inspectors are doing a one-mile jog in their physical conditioning program. Exercise builds lung capacity, endurance.

Sandia All-Star Softball Team to Play Manzano Base, Monday, July 29

Newly-elected members of the Sandia Laboratory All-Star softball team will face the Manzano Base team Monday, July 29, in the second game of the annual Intra-Base All-Star Tournament.

Game starts at 8:30 p.m. Spectators are welcome to attend, but must enter Manzano Base with the Sandia team at 8 p.m. All games of the tournament will be played at Manzano. Sandia Base and Kirtland Air Force Base teams will also participate. The double elimination tourney will wind up Aug. 1.

Members of the Sandia Laboratory team are J. K. Fjelseth (3452), D. J. Burns (1321), Leo Chavez (4212), J. D. Aragon (3452), B. A. Ball (1112), F. J. Mistretta (1321), K. J. Deller (5131), R. R. Balthaser (7521), T. H. Traver (7323), C. R. Martell (2531), William Drozdick (4411), R. K. Bump (7523), R. L. Peabody (7324), L. S. Wadell (5134).

L. L. Strawderman (4411), R. G. Dosch (1122), C. D. Salazar (4254), K. D. Flynn (7164), D. H. Weingarten (1422), W. D. Raburn (5321), E. L. Burgess (7522), Herb Filusch (7118), G. W. Smith (5132), D. E. Grim (2534), P. D. Landis (4413), D. L. Hurt (2313),

Frank Lucero (3452), Robert Bailey (7532), and P. M. Beeson (5321).

Boy Scouts Seek Commissioners for Manzano District

Additional Boy Scout Commissioners are needed to aid Scouts in the Manzano District.

"We never have enough volunteers and right now we could use at least six men," A. L. Ouellette (4411-4) reports.

Each Commissioner usually has charge of two Scout Troops and their Scout Masters. He trains the Scout Masters, attends their monthly "Round-Table" meetings, and assists them to see that Scout Troops are functioning in the best interests of scouting.

Monthly meetings are held by the Commissioners and several social events are planned during the year. In October, as a group, they will visit the Philmont Scout Ranch in Cimmaron.

"Volunteers will be trained," Mr. Ouellette said. "No previous scouting experience is required—just the will to work."

For more information, call Mr. Ouellette, 299-9266.

Coronado Club Members to Go 'South of Border'

Tonight, the Coronado Club will feature a South of the Border Buffet from 6:30-8 p.m. George Davies will provide music. Prices are \$1.25 for adults, \$1 for children.

The Club will feature a Family Swim Night for its members from 6-9 p.m. on July 24. Members are encouraged to bring their own picnic supper. There'll be no charge for the event; season swim tickets aren't required.

On July 27, a Hawaiian Luau Buffet will be featured at the Club. The buffet will be held from 6-8:30 p.m.; dancing will be from 9 p.m.-1 a.m. There'll be Hawaiian entertainment. Prices are \$2.60 for members, \$3.60 for guests.

SOFTBALL STANDINGS

(As of July 12, 1963)

American League—Second Round		
Team	Won	Lost
13-23-3300	5	2
13-1400	5	2
24-25-34-4100	6	2
(1st Round Champs)	5	2
5000	1	7
4400	5	2
7100-1	4	4
72-7100-11	1	6
75-4600	2	5
7300		
National League—Slow Pitch—Fourth Round		
3400	1	1
41-25-AEC-2600	1	0
71-13-44-2400		
(1st, 2nd, 3rd round champs)	1	0
7300	0	1

Sandia Base Youth Activities to Profit from Dukes Baseball Game

The Albuquerque Dukes Baseball Club has designated Thursday, July 25, as Sandia-Manzano Night at Tingley Field. The Dukes will play Austin in a Texas League game sponsored by the Sandia Base Dads' Club. Ceremonies for the evening will also include the Sandia Base Drum and Bugle Corps, the Manzano Drill Team, and presentation of the Base Young America All-Star Baseball Team.

One-third of the advance ticket sales sold on the Base will go to the Dads' Club for Sandia Base youth activities. The Club promotes a wholesome and construc-

tive recreational program for the youthful dependents of military and civilian personnel working at Sandia and Manzano Bases.

Sandia Corporation personnel and their families are invited to attend the event. Advance sales are 75 cents each, 25 cents of which will go to the Dads' Club. They're available from Base Special Services in Bldg. 360, ext. 22213, until July 25.

Congratulations

To Mr. and Mrs. W. D. Buchly (1532) a daughter, Lisa, on June 22.

To Mr. and Mrs. Howard Gerwin (1411) a son, Spencer Neal, on July 6.

To Mr. and Mrs. Robert J. Kehl (4254-2) a son, Steven Robert, on July 6.

To Mr. and Mrs. Tom Tormey (4254-7) a daughter, Valery Ann, on July 5.

To Mr. and Mrs. John Grau (4412-5) a daughter, Margaret Elizabeth, on July 5.

To Mr. and Mrs. Jose S. Montoya (4611-2) a son, Christopher, on July 15.

Sympathy

To John Berger (3242) for the death of his father June 16 in Albuquerque.

To Eugene W. Glaze (1433) for the death of his mother-in-law June 20 in Columbus, O.

To P. D. Seward (2643) for the death of his mother in Albuquerque.

To J. I. Hegge (7412) for the death of his mother in Hillsboro, N. Dak., July 23.

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

SINGER SEWING MACHINE, walnut cabinet, all attachments, never used, \$125; child's swing set w/glider, \$5. Wierzbicki, AL 4-4221.

OLDS-AMBASSADOR TRUMPET, \$65; 8-ft. marine plywood rowboat, \$20. Eaton, 9513 Claremont NE, 298-3865 after 5 p.m.

GIRL'S 20" bicycle, blue and cream, training wheels if desired. Coleman, AX 9-8321.

COUCH AND CHAIR SET, beige, \$15; 6-week-old puppies (F), Pekinese mother, \$5. Gomez, AL 6-1584.

ROLLEIFLEX, 4x4, GE exposure meter, filters, tripod, accessories, \$70. Roth, 242-4636.

FOODLE PUP, male, miniature, pedigree, 4 months old, white w/tinge of apricot, \$70. Johnstone, DI 4-6388.

TWO-WHEEL HAULING TRAILER, 42"x72" wood bed, steel frame, leaf springs, ball hitch. Barber, 299-4287.

1960 CUSHMAN EAGLE SCOOTER, Schafer, 299-4634.

EXERCYCLE, 2-speed. Keyser, AL 6-1285.

GIRL'S 24" bike, pink, \$15. Baxter, 1610 Bayita Lane NW, DI 4-7601.

WURLITZER 13-pedal reed organ. Anderson, 877-9605.

GARBAGE DISPOSAL UNIT, Westinghouse, not in working order, you repair, \$8.50 delivered. Gillespie, AL 5-6421.

HOME DARK ROOM, complete, Opemus 4x4 enlarger, \$70. Simpson, AX 9-2266.

'52 PONTIAC Chieftain, 2-dr., hydramatic, R&H, \$50. Petterson, AX 9-0164.

PICNIC TABLE, redwood, folding w/attached benches, legs and supports made of tubular stainless steel, 72"x30" top, \$15. Hoaland, 256-1289.

BEDROOM SUITE, modern walnut finish, backcase bed w/box springs and mattresses, chest of drawers, dresser w/mirror, available Aug. 1-17, \$80. Culp, 268-9992.

TENT TYPE CAMP TRAILER w/20-gal. water tank and space for camping gear, \$150; refrigerated air conditioner, 3/4 ton, 220 volt, \$60. Hunter, AX 9-1089.

REFRIGERATOR, \$70; baby stroller, \$20. Fisher, AX 9-9235.

AUTO COOLER, 12-volt, \$15. Smith, 4615 Palo Alto, SE, AL 5-7389.

ABOUT 210 8-in. blocks, 60 cap blocks, 4-in., flat, used, cleaned, ten cents each, you haul. Colek, BU 2-3285.

3-BDR., den, fireplace, 2 baths, school 2 blocks, \$1250 below market for quick sale. Ray, AX 8-0408.

2-BDR., basement den, DR, separate double garage, red tile roof, walk to schools, UNM, shopping, \$900 down FHA. Lambert, AL 6-2043.

EXCELSIOR "ACCORDIANA," white pearl, blue trim, 120 base, 41 treble keys, 2 bass, 3 treble switches, 18 lbs., straps and case, \$195. Glasse, 298-0842.

MINOX CAMERA, self-contained exposure meter, case and cord, \$85; folding flash lamp and tripod, \$15. Quinlan, AM 8-5665.

'57 RENAULT DAUPHINE, w/w tires, radio, must sell, moving, make offer. Oline, 268-6606.

HYBRID IRIS PLANTS, all named varieties. Minter, AL 6-9225 after 5 p.m.

UNIVERSAL JEEP, full metal cab, hubs, heater, towbar, 4-wd., \$595. Everett, AX 9-6057.

2 REGISTERED NUBIAN DAIRY GOATS, out of excellent dairy stock, does, born July 2, debudded and tattooed, \$50 ea. Stearns, Peralta, N. M., 865-7551.

WALNUT BEDROOM SET, dresser, bed, springs, mattress, \$40; Ethan Allen maple bed, \$25. Hipsher, 10502 Snow Heights, AX 9-0673.

3-BDR HOME w/b fireplace, 28' den, built-ins, double garage, h/w/floors, landscaped w/9 fruit trees, 1/4 acre, Paradise Hills. Davis, 898-2227.

KODAK 35 mm stereo slide camera, flash attachment, Brockway light meter, \$75. Peckum, 256-3363.

FLOOR-LENGTH WEDDING GOWN, size 7-8, worn once. James, 255-8429.

ELECTRIC HOT WATER HEATER, 30-gal., \$35. Galbreath, 344-4306.

1 PR. SNOW TIRES, 7:10x15; 1 pr. rink skates, men's size 8, semi-precision bearings. James, AX 8-0709.

ARABIAN HORSES: colts, filly, and 3-yr.-old gelding; also half Arab yearling colt. Muilenburg, DI 4-7664.

SIMMONS HIDE-A-BED, \$20; TV table, rotating top, \$5. Cashon, 242-3345.

'53 STUDEBAKER 1/2-ton pickup, \$350; Unimat precision lathe w/accessories, \$85. Petrini, 298-0433.

RUGER, convertible single six .22 cal. w/holster, \$55. Klein, 268-4669.

'59 CUSHMAN EAGLE SCOOTER, buddy seat, windshield, new motor and transmission. Sims, 2120 Glorietta NE, AX 9-8824.

'51 RAMBLER, new battery, connecting rods, valve job, universal joints, \$100 or best offer. Lawwill, AX 8-2681.

DECORATOR ITEM, antique white narrow mirror w/small marble shelf for entry, bedroom, living room, \$25. Norvill, AL 5-2787.

NAVAJO RUGS, new; car cooler; Westinghouse timer; hand-decorated porcelain jewelry, new; headboard and steel frame and springs. Williams, AX 9-2747.

24" BICYCLE; trailer hitch, universal type; baby crib, complete; high chair; dishwasher. Dodd, 9706 Morrow Rd., NE, AX 9-6330.

SELL OR TRADE, desk and book case for cash or record player. Canter, 268-0608.

PIPE DIES, cutter, vise, fittings, etc.; small metal lathe; venetian blinds; portable evaporative cooler; apartment-size washer. Kross, AL 6-0223.

TIRES, two, 7:50x14 Montgomery Ward's, used 400 miles, \$10 ea. Erwin, 299-2418 between 4-6 p.m.

SCREEN DOOR, 2'8"x6'8", w/hardware, \$5; golf clubs, left-handed, bag, cart, 2 woods, 5 irons, putter, \$30. Brownson, AX 9-0449 after 4 p.m.

16" BOY'S sidewalk bicycle, coaster brake, new tire, \$10. Booker, 299-3554.

9000 SHARES Lucky "9" uranium; 35mm Minolta A-2, tripod, exposure meter; 3 cemetery lots, Sunset Memorial, will trade. Villella, 299-6261.

'60 VW deluxe sedan, black, w/w tires, R&H, 31,000 miles, \$1195. Ruddle, 247-3287.

BUNK BEDS, innersprings and mattresses, \$50; patio table and benches, \$10. Pope, 816 Val Verde SE., AL 5-6702.

SHOTGUN, Winchester Model 12 slide action repeater, 12 gauge, 23 1/4" chamber, modified choke, \$75. Kubiak, 256-1513.

3-BDR ROBERSON, 1 1/4 baths, pitched roof, a/c, patio, new drapes, other extras, 4 1/2% GI loan, \$83/mo. Johnson, AX 9-8894.

'55 PONTIAC 2-dr. HT, R&H, w/w, \$350; 3 used 8:20x15 w/w; two 15" wheels for Chevrolet. Wilson, AX 8-0049.

GAS STOVE, \$25. Maestas, 2117 Wilma Rd., NW., CH 3-3220.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, July 26

4-BDR HOME, sell below appraisal, walled corner lot, landscaped, a/c, drapes, carpet, 15'x40' covered patio, \$16,400. Coughenour, 299-0914.

'61 MUSTANG CYCLE, 12 1/2 hp, 2800 miles, emerald green; '59 hotrod Impala, '61 Corvette mill, '60 Borg-Warner 4-sp. stick, 5.14 rear end. Henderson, 255-1941 after 6 p.m.

HI-STANDARD .22 cal. revolver, service holster, \$25. Top-grain cowhide brief case, tan, accordion type, \$15. Dehon, 898-2219.

KENMORE UPRIGHT VACUUM, \$20. Sundberg, AX 9-2177.

HALLICRAFTER SX101A receiver. Rawlinson, DI 4-6609.

AIR CONDITIONER, 3500 cfm w/pump, float, \$40; Chambers gas range, \$35; Kenmore tank-type vacuum cleaner, \$15; Universal 21" TV, \$50. Rehbeck, 268-7646.

JEEP STATION WAGON, 2-wheel drive, \$150; Buick, 4-dr., R&H, standard shift, \$95. Browne, DI 4-6831.

GIRL'S 24" bicycle, \$15 or best offer. Duvall, 299-8744.

SELL OR TRADE: 17x18 Powercat catamaran boat, twin Mercury Mark 58 engines, American trailer. Capaldi, 2013 Palomas NE, after 5 or weekends.

CHROME DINETTE SET, yellow formica, leaf, 30"x60", four chairs, \$30; Cosco youth-high chair, chrome, yellow vinyl, \$6. Anderson, ext. 27174.

RED COUCH, make offer. Cordova, 10523 Jenaro SW, 855-9415.

'57 AUSTIN of England, 4-dr. sedan Westminster, Model A-90, \$500. Regan, AX 9-8985.

DINETTE SET, grey formica table top, four chairs; stroller; maple high chair; maple crib w/inner-spring mattress. Hunter, 299-7978.

NEW PLASTIC PIPE, approx. 50' in a single coil, 1" diameter, 75 psi, Yardley, \$3. Giddings, 298-6221.

ROBERSON, GI or FHA, double garage, family room w/fireplace, 2 baths, carpets, drapes, landscaped, walled backyard. Lettetter, 299-4343.

HEATHKIT preamplifier and "Noe" amplifier, \$40. Scranton, 299-5720.

SMALL 2-bdr. house, near Sandia Base, \$500 down, \$90 a month, total \$11,500. Pope, AL 5-6702.

1959 RIVERSIDE SCOOTER, \$100. Jaramillo, AX 9-4564.

TRAINING WHEELS for bike, 16-20-24 in., 1 pr. \$2; 2 pr., \$3.50. Foster, 299-6240.

SCHWINN 27" Continental 10-speed English racer, \$55. Ogden, 1229 Palomas, SE, Apt. 17, AL 6-7106 after 5 p.m.

TWO matching double beds, complete, make offer. Garcia, AL 5-3201.

REGISTERED NUBIAN milk goat now giving about 3 qts. a day, \$40 or best offer; Black Dutch rabbits, \$2. West, BU 2-3460.

RCBERSON, 1850 sq. ft., 3-bdr., den, 1 1/4 bath, DR, elec. kitchen, raised cabinets, 2-car garage, a/c, carpets, drapes, \$20,500 appraisal. Boyd, AX 9-9375.

ELECTRIC PUMP to empty fish pond, \$8; 6' mahogany bar top, \$15; forced air gas heater for large Hoffman home, needs firebox repair. Bascom, AX 9-1662.

'61 RAMBLER Metro, st., R&H, 10,000 miles, green and white; '53 Studebaker, st/OD, R&H, admiral blue. Naumann, 11716 Summer Ave. NE, 298-6476.

RCA WHIRLPOOL '62 portable dishwasher w/Supreme Deluxe, new, orig. cost, \$279. Cooper, 877-4674.

PORTABLE TYPEWRITER w/case. Morrissey, CH 7-1130.

BABY BED, new mattress, sturdy wooden high chair. Moore, 268-0276.

'56 BUICK Roadmaster, 4-dr., PS, PB, best offer above \$200. Disch, AX 9-1201.

'53 CHEVY, 2-dr., new tires, \$175; '56 Lincoln, 4-dr. Premiere, factory air, new tires, \$495. Millard, AX 9-2039.

MOSSMAN 3-BDR., 1 1/4 bath, dining room, fireplace, a/c, double garage, drapes, carpet, 3000 Dakota NE. Hanson, 256-7846.

'59 RENAULT DAUPHINE, black finish, w/w tires, standard clutch, \$400 or best offer. Foeller, 298-1213.

POLAROID MODEL 150 camera w/case w/ink light, filters, etc.; 2 adjustable bed frames. Trumble, 298-3397.

'60 RENAULT, CV-4. Woodley, AM 8-6871.

COLLIE PUP, tri-colored, championship stock. Linn, BU 2-3986.

SELL OR TRADE: rotary mower, 25" Powerrama for reel type power mower. McCammon, AL 5-6125.

STEREO TAPE SYSTEM, complete 4-track; Sony 464-D record/play, plus case; 2 ea. pre-amp amplifiers; 2 ea. 12" speakers, \$195. Browning, AX 9-6384.

ALL WOOL RUG, 9x12 oriental style w/pad, \$150. Keith, 1200 Madeira SE, Apt. 209, 268-8805.

CAR COOLER; dishwasher; twin mattresses, make offer. Piraino, 255-5126.

'55 MG TF-1500. Johnson, AX 8-0296.

'58 PONTIAC station wagon, 370 cu. in. V8, stick shift. McDowell, AX 9-6222.

FRIGIDAIRE refrigerated air conditioner, window mount, \$50. Patterson, AX 9-6590.

FREE 4-mo.-old female puppy, has had all shots, needs good companionship. Reinman, AL 6-9737.

3-BDR., 1 1/4 bath, 6-yr.-old Mankin home, many extras and improvements. Newton, 265-4775.

TAPE RECORDER and accessories, Wollensak, \$125. Frettem, AX 9-1588.

3-PIECE LIVING ROOM SUITE, 2 lamp tables, sell complete or by piece, must sell. Zucuskie, 265-4772.

COMPLETE SINGLE CHANNEL R/C outfit, transmitter, receiver, compound escapement, motor and airplane, \$45. Dorazio, 268-6895 after 5 p.m.

SINGLE BED w/headboard frame, springs, mattress, \$30. Berger, 298-4234.

HAM SHORTWAVE RECEIVER, Hammarlund HQ-129X, w/extension speaker, \$78 or trade for tape recorder in good condition. Armstrong, AL 5-0662.

GAS RANGE; refrigerator; swivel rocking chair; modern black complementary chair; low white and gold tiled coffee table. Loeper, 298-6019.

MARK IV MONITOR automobile air conditioner. Cook, AM 8-6406 after 5 p.m.

REEL TYPE MOWER, 18" cut, Jacobson, B&S engine, \$60; GE refrigerator, \$50. Lindsay, AX 9-7454.

MARTIN folk/jazz guitar, Model 00-18, steel strings, accessories, \$100; want classical guitar, good condition. McDonald, AL 6-6929.

BOXER PUPPIES, 9 weeks old, sired by Champion Witchata of Cherokee Oaks, 2 males, 2 females, AKC registered. Bewley, 1617 Utah NE, 298-5728.

CANVAS-COVERED LUGGAGE CARRIER for compact car, \$25, original cost, \$33, used once; seat belt adapter plugs for VW, 50 cents. Hoagland, 299-7097.

REVOLVER, Colt Trooper 38 spl.; German Luger 9 mm, trade or sell, want old coins and guns. Zaluga, 344-1564.

1959 BALDWIN Organ-sonic electric organ, Model 30. Ernst, 268-9414.

FOLDING ACCORDION DOOR, 8'x8', \$17.50; American Rifleman 1950 to date, \$3/yr. or \$25 complete; K-22 pistol, \$50. Shunny, AX 9-2787.

SELL OR TRADE: Heathkit "Apache" 180W transmitter, BC-348-Q receiver A.C. modified. Dobias, 4615 Inspiration Dr. SE, 256-7476.

4-BDR HOUSE, 1 1/4 bath, a/c, workshop in dbl. garage, \$450 down, \$14,250 total. Boxx, 2700 Carol NE., AX 9-2855.

BALDWIN ACROSONIC SPINET, ebony, make offer, must sell; Magnavox console TV, needs repair, \$75 or best offer. Sanchez, 298-7103 after 5 p.m.

'52 STUDEBAKER Champion, new paint and tires; Wurlitzer spinet piano, blonde, \$345. Fesler, 8902 Phoenix Ave. NE. AX 9-1020.

SILENT CRAFTSMAN hand lawn mower w/ grass catcher, \$20, used less than 1 season. Jones, 298-3891.

CHROME DINETTE TABLE, \$10; '54 automatic Kenmore washer, \$20; BC221 w/modulation, AC power supply and manual, \$45; stand for Westinghouse space-mate dryer, \$5. Bassett, 345-0728.

WANTED

UPRIGHT FREEZER 10 to 12 cu. ft. Rehbeck, 268-7646.

ONE SMALL CHILD to take for care in my home daily. Wiseman, AX 9-2503.

BABY SITTING, your home, SE Heights near bases, reliable. Burns, 908 Cardenas SE., AM 8-1306.

RIDE from 1825 Somerville NE to Bldg. 802. Pierce, AX 9-0935 after 5 p.m.

TO BUY OR BORROW old issue of Mod-El Airplane News magazine, particularly 1945 to 1953. Breitenbach, 268-7900.

RIDE OR JOIN CAR POOL from vicinity of Moon and Indian School Rd. to bldg. 836. Stephenson, 298-5902.

TO TRADE boy's 20" bicycle in excellent condition for girl's 20" bicycle in similar condition. Clark, AX 9-4819.

RIDE from vicinity Hannett and Tomasita NE to bldg. 802. Barrea, 298-5050.

TO RENT permanent residence, 3-bdr. furnished or unfurnished house, Van Buren school area. Hearn, 268-9712.

PARKER BROS. SHOTGUN in excellent condition, Damascus barrels o.k. Wilson, BU 2-3225.

TRANSMITTER, AM-CW, for beginning teen-age ham; desire 6-band 100-150 W, VFO unit, accessories, antenna, also interested in superhet receiver. Adams, AL 6-7265.

LADY to share home in SE Heights with other lady. Baumgarten, AM 8-2826.

POODLE STUD, Toy female fully registered, will provide pick of the litter. Bascom, AX 9-1662.

FOR RENT

1-BDR. furnished apartment located at 609 San Pablo SE. Kollman, AM 8-6761.

1-BDR. HOUSE, Virginia & Trumbull SE, vacant after July 19, \$55/mo. Sanchez, 298-7103 after 5 p.m.

2-BDR. APT., gas stove, refrig., a/c, w/w carpet, drapes, 601 Valencia SE. Ross, AL 5-0486.

FURNISHED 2-BDR. APT., water and garbage paid, \$85/month, 3503 Thaxton SE. Chavez, AL 5-5461, or 298-5091.

LOST AND FOUND

LOST—Sterling Indian design earring, Practical Electronics booklet, 3-blade large brown bone pocket knife w/hole, brown frame sunglasses, 10-yr. SC bolo tie, lady's Zippo cigarette lighter, 10-yr. SC bracelet, 3 keys on ring, horse-shoes taped with yellow tape left near 894 gate, 2 1/2" long flat key, #82, green clip-on sunglasses, Anna Beller Alb. Nat. check book. LOST AND FOUND, ext. 29157.

FOUND—Green temple pieces safety glasses, blue clip-on bow tie, safety glasses, small brass key found 828, Rm. 7, grey bifocal glasses w/alum. temple pieces found on G Street Bldg. 815, gold frame green sunglasses left in medical two weeks ago. LOST AND FOUND, ext. 29157.

IEEE Organized by Combining Two Major Professional Groups

The following is another in a series of articles describing activities of the member organizations of the New Mexico Council of Technical and Scientific Societies.

The Institute of Electrical and Electronic Engineers (IEEE) was officially created Jan. 1, 1963. The organization is new, but not its membership.

The IEEE is the result of a merger between the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE). The IEEE is an international organization of approximately 170,000 technicians, engineers, and scientists throughout the free world.

In New Mexico, the electrical and electronic engineers have been organized in their respective professional societies for many years. Prior to the merger, there were two active societies: The Northern New Mexico Section of the AIEE and the Albuquerque-Los Alamos Section of the IRE.

The IRE Section was organized May 6, 1948, with 40 members. By Dec. 31, 1962, its membership had grown to 700. The Northern New Mexico Section of the AIEE was organized Jan. 25, 1951, and, at the time of the merger, membership had increased to 350.

"The local AIEE and IRE organizations, during these formative years, made significant contributions to their memberships, professions, engineering and scientific education, and to the community," T. L. Pace (7435), IEEE chairman, said. "During the past several years, the local societies have awarded a number of one-year college scholarships to high school seniors. The students were selected on the basis of the originality and quality of exhibits they entered in the State Science Fairs. In addition," Mr. Pace continued, "large numbers of cash awards and other types of prizes have been given to junior and senior high exhibitors at local and regional science fairs, and to the University of New Mexico Student Technical Paper competition winners. Considerable financial assistance has also been provided for improvements to the UNM Student Branch Library and for other student activities promoting greater interest in electrical, electronic, and related scientific fields."

Currently, the Albuquerque Section of the IEEE has a membership of more than 1000, coming from cities located throughout the

northern three-quarters of the state.

Operating within the Albuquerque Section is the Los Alamos Sub-Section. It elects its own officers, conducts the business and administration necessary for sub-section operation, and conducts technical meetings in the Los Alamos-Santa Fe area.

Officers of the Albuquerque Section, in addition to Mr. Pace, are Ray C. Cainski, Public Service Company, vice chairman; E. L. Amonette, Aztec Enterprises, Inc., secretary; and R. F. Kinney, Allis-Chalmers, treasurer.

Programs of the Albuquerque Section cover a wide range of activities. Within the Section are technical, educational, and social special-interest Professional Groups which hold technical programs in the fields of nuclear science, electron devices, audio, microwave theory and techniques, antennas and propagation, space electronics and telemetry, and circuit theory.

"Meetings are held to stimulate the members' interests," Mr. Pace said, "and to offer an opportunity for people in related professions to exchange information in the rapidly-advancing electrical and electronic technology."



"GOES GREAT" says Bobby Grebe as he enjoys an ice cream cone at the Coronado Club. The twin swimming pools have been drawing record attendance recently. Bobby is the son of Don Grebe of Division 7215.



ALEXANDER JACK (3311-1) demonstrates development of bacteria cultures to a group of Brazilian nurses, a doctor, and social worker. The tour of Sandia industrial medicine facilities was arranged at the request of the University of New Mexico Peace Corps Training Center.

Hypertension Afflicts Five Million; Effective Drugs Now Can Combat It

by S. P. Bliss, M.D.

Sandia Corporation Medical Director

Hypertension is also known as high blood pressure. Everyone has blood pressure. It is simply the pressure put on the walls of the

arteries as the heart pumps blood through them.

Blood pressure goes up when we are excited and it goes down when we rest. These changes are perfectly normal.

In some people blood pressure remains higher than it should be. This condition is called hypertension, and about five million people in the United States have it.

In hypertension, the heart must pump with increased force, and the arteries must carry blood that is moving under increased pressure. If high blood pressure continues for a very long time, the overworked circulatory system will not function as well as it should.

Hypertension may be serious or it may be mild. In most cases we do not know what causes it. In about five per cent of all cases, the hypertension can be traced to some other disease, and curing the underlying ailment usually means an end to the hypertension.

Even when the cause of hypertension is unknown, a great deal can be done to keep it under control. Physicians can choose from a growing list of effective drugs, and from other methods of management such as diet and changes in living habits.

Sandia Scientists, Engineers Contribute Technical Writings

During the past quarter, 217 technical papers were sent to the AEC's Division of Technical Information Extension at Oak Ridge, Tenn., by Sandia Corporation. This brings Sandia's total for the year to 328, according to a report by Technical Information Department 3420. The papers are used in the AEC's civilian application program.

In addition, 12 technical papers have been given standard distribution, making them available to the public through AEC's Depository Libraries and the Office of Technical Services, Department of Commerce, Washington 25, D. C.

Thirty-two titles have been added to the Sandia Reprints and Monographs series. A total of 13 articles by Sandia Corporation authors have been published in various technical journals.

Presentations of technical papers have been made by 27 Sandia Corporation scientists and engineers at symposiums and meetings throughout the nation during the past three months.



INTERPRETING for a group of Brazilians who visited (3421-1), Dr. S. P. Bliss, Medical Director 3300, at Sandia Laboratory recently to learn of industrial medicine practices in the United States is Marcel Weinreich. Clinical Medical and Industrial Hygiene activities.

Sandia's Safety Record

**Sandia
Laboratory
HAS WORKED
2,590,000 MAN HOURS
OR 74 DAYS
WITHOUT A
DISABLING INJURY**

**Livermore
Laboratory
HAS WORKED
442,500 MAN HOURS
OR 82 DAYS
WITHOUT A
DISABLING INJURY**