

# Sandia Assigned Aerospace Nuclear Safety Project

The Atomic Energy Commission has expanded its nuclear safety engineering and test program to include the testing of aerospace nuclear systems. Responsibility for this work has been assigned to the Sandia Laboratory, Albuquerque, New Mexico. Similar work on the testing of land-based nuclear systems is being conducted for the AEC by the Phillips Petroleum Company at the National Reactor Testing Station, Idaho.

The objective of the aerospace program is to obtain data on the safety aspects of nuclear systems during launch, flight into outer space and re-entry into the earth's atmosphere. Once this data is obtained, simulated, non-radioactive systems of the type now being developed by the Commission will be launched into outer space.

Much work in aerospace nuclear safety has already been conducted by development contractors for AEC space systems. The work to be accomplished by Sandia will be conducted in close cooperation with these contractors who have the primary responsibility for the safety of the systems.

The program to be conducted by Sandia includes:

1. Development and conduct of a long-range aerospace safety research and development program to establish techniques for assuring safe performance of nuclear systems. This phase will involve basic research and engineering to develop data which could be used to predict re-entry conditions for a variety of nuclear aerospace systems.

2. Development and conduct of ground tests to determine the performance of aerospace nuclear systems during handling and launching. This phase will include: mechanical tests to simulate impact on land or during ground shipment; chemical tests to simulate conditions of intense fire or explosion during launch failure; and nuclear tests to determine the extent of the danger of radiation resulting from the melting of a nuclear device or parts of such a device.

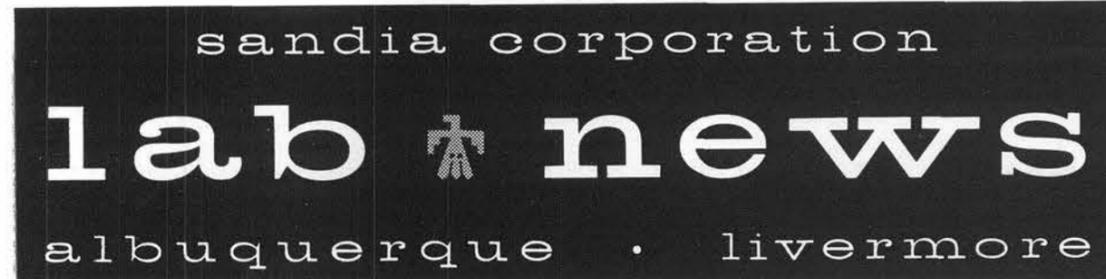
3. Development of a flight test program which will demonstrate that the safety aspects of the system will function as designed. This phase will include design of flight tests;

recommendations of missile ranges, types of vehicles and trajectories to be used; procurement of payload and components; supervision of launches; specification of instrumentation and data requirements; analysis of test data; and conduct of studies of the behavior of radioactive materials in the upper atmosphere. This phase will also include the testing of design features that will assure ultimate destruction of the nuclear power systems on re-entry. This destruction would prevent radiation hazard since most of the remaining debris would be widely dispersed in the upper atmosphere.

4. Support and coordination of

nuclear aspects of missile range safety during launches of nuclear devices. This phase will involve close liaison with the designers and manufacturers of aerospace nuclear systems and government agencies to assure that the launch can be conducted without undue risk.

The Aerospace Nuclear Safety Department, 7110, V. E. Blake, Jr., manager, has been given the task of accomplishing Sandia's assignments in the program. Reporting to Mr. Blake are H. E. Hansen, supervisor Aerospace Nuclear Safety Division I, 7111; A. J. Clark, supervisor Aerospace Nuclear Safety Division II, 7112; A. E. Bentz, supervisor Aerospace Nuclear Safety Division III, 7113; and E. L. Harley, supervisor Full Scale Testing Support Division, 7118.



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## AEC Announces New Bldgs., Shock Facility for Sandia

Construction of two new technical buildings and a shock testing facility for Sandia Laboratory was announced last week by the Atomic Energy Commission.

One of the two technical buildings will be a laboratory with an attached air-inflated building in Area Y. This will be used for antenna design and testing by Electronic Systems Department 1420.

The other building will be a warehouse for Area III.

The shock testing facility will be used by Facilities and Instrumentation Department 7310 to impact large units. A water jet will propel a sled down a track at speeds up to 400 ft. per second. The facility will be located in Area III.

Cecil M. Morrisett (4543-3) is the Plant Engineering Department project engineer for the three construction jobs.

Work on the two technical buildings is to be completed within 120 days after the contractor receives notice to proceed from the AEC. The shock test facility will be completed within 300 days.



**INSTRUCTING INSTRUCTORS**—Charles S. Johnson, Weaponry Training Department 2310, discusses use of weapon ancillary equipment with military instructors. The story of Sandia Corporation's Military Liaison organization begins in the article below.

## Atomic Weapon Veterans Head Sandia's Military Liaison Organization 2300

Second in a series of articles describing the work of Sandia Corporation's general organizations appears here. These articles will appear from time to time in the Lab News and it is hoped that these non-technical explanations will help all employees better understand the task undertaken by the Corporation.

This article concerns the organization headed by A. B. Machen, Director of Military Liaison, 2300.

The purposes behind design, development, and production of nuclear weapons are realized in the world-wide activities of Sandia Corporation's Military Liaison Organization 2300. This organization provides trained instructors, operational manuals, and field engineers to give U. S. military personnel the know-how to handle Sandia Corporation products. The exchange of technical information between agencies responsible for atomic weapons operational use and Sandia Corporation is a 2300 responsibility.

In addition, 2300 is the Corporation's acceptance organization for Sandia-designed items which are manufactured in supplier's plants throughout the nation. In five regional offices, Sandia field representatives keep a careful eye on production lines and oversee inspection of all weapon materials.

Military Liaison is headed by Arthur B. Machen, one of the old-timers in the weapons business, who worked for the Manhattan Engineer District when the Los Alamos Laboratory was opened. Mr. Machen was a member of the assembly team for the first atomic test at the Trinity site near Alamogordo in 1945 and was a member of the assembly and arming party on Tinian Island in August of that year when the second and third atomic blasts quickly ended World War II in the Pacific.

After the Tinian assignment, Mr. Machen returned to Sandia Laboratory, newly established at Sandia Base, to set up a facility for the dissemination of atomic weapons information to military organizations. "Until that time, weapons had to be handled by scientists in practically laboratory conditions,"

he said. "Our job was to give military people a team capability to use nuclear weapons by transferring to them technical information and a first-hand knowledge of procedures. During the years, the job has grown from a local operation to one of global proportions; the work is more complex, but the mission is the same."

### Weaponry Training Department

As an officer in the Manhattan Engineer District, Ivan M. Moore, 2310 department manager, was instrumental in training the first military special weapon assembly teams at Sandia in 1946 and has been in the weaponry training business ever since. One of the primary missions of this department is to train military instructors in all essential aspects of weaponry so that they in turn may qualify the large numbers of military personnel who will use the weapons in the field.

Sandia weaponry instructors present approximately 24,000 student-hours of training annually to about 5000 military and civilian personnel. The accumulation of training information begins as

(Continued on Page Three)

## ECP 1961 Reserve Fund Buys Equipment, Building Repairs

Each December, the reserve fund of the Sandia Laboratory Employees' Contribution Plan — one per cent of the total ECP fund — is allocated to participating agencies which, in the estimation of the Fund Drive Committee, have greatest need for the fund.

In 1960, the ECP reserve fund was allocated to building drives sponsored by several Albuquerque service organizations. The drives provided funds for both repairs and new building projects.

The 1961 Fund Drive Committee distributed last year's reserve fund for a different use. In December of last year, the money in the fund, a sum of \$1270, was used for purchase of equipment for three local agencies and for repairs by a fourth agency.

Funds were used by the New Mexico Rehabilitation Center to purchase a stretcher and wheelchair. A bed, a walker, and two wheelchairs were purchased for use by the New Mexico Society for Crippled Children and Adults. The local agency of the National Multiple Sclerosis Society purchased a wheelchair and a walker with their share of the fund. And the Frances Lynn Home used their share for repair of an inside wall of the Home.

The agencies agreed that, to make the best use of the reserve

fund, one agency of their number — the Rehab Center — should place one order for all of the equipment, so that added costs of small orders could be avoided. Accordingly, the ECP Committee allocated the fund money to each agency, who in turn paid the Rehab Center for its share of the equipment. The interior repairs at the Frances Lynn Home were completed recently.

Meanwhile, funds donated by Sandia Lab employees to the 1961 ECP fund drive continue to help the 34 participating agencies perform their vital work.

## G. E. Tucker Speaks To Fourth Army Group

George E. Tucker (3311) recently gave a talk to the Fourth Army Area Supply and Maintenance Conference in Fort Worth, Tex. His topic was "Portable Radiac Equipment at Sandia Corporation — Its Calibration and Use."

Presently Mr. Tucker is in charge of the film badge program at Sandia. He received his Bachelor's degree in mathematics from Washington and Jefferson College, took advanced work at the University of New Mexico, with further study in electronics while in military service. Prior to entering the service, he taught mathematics in Pennsylvania.



**EIGHT-YEAR-OLD Dennis Hamblin** enjoys new wheelchair purchased for New Mexico Rehabilitation Center with part of 1961 ECP reserve fund. Sharing his enjoyment are members of the 1961 ECP Committee, (left to right) Mrs. J. M. Sharp (4423-2), L. L. Pierce (4224), and W. R. Rosenberg (4360).

## Editorial Comment

## ECP Progress Report

Last October some 6740 Sandia Laboratory employees signed up to help support the Employees' Contribution Plan fund drive. Some gave cash and many more signed up for a monthly payroll deduction. Then most of us forgot all about it, understanding that our funds would do good the year around.

Good they are doing.

The pledges we made last October were effective December 1961. Since then Sandia Corporation employees have given \$53,824.78 to the agencies participating in the Employees' Contribution Plan. Here's where the dollars went:

National Arthritis & Rheumatism Foundation	\$ 924.68	Muscular Dystrophy Association of America	\$ 530.99
American Cancer Society	3223.75	National Multiple Sclerosis Society	376.69
Cerebral Palsy Association of Bernalillo County	2074.12	Albuquerque Association For Retarded Children	861.58
New Mexico Society for Crippled Children and Adults	1928.49	United Community Fund (25 agencies)	40,920.04
Bernalillo County Heart Association	2444.45	National Association For Mental Health	539.99

So you see, those pledges you made last fall are doing a lot to make Albuquerque a better place to live for many people.

## Fishing Is Real Challenge When You Face An 82-Lb. Grouper Under Water

A scorpion fish with poisonous spines, moray eels, lobster, and an octopus measuring 5 ft. from tip to tip were among the wide variety of fish caught by several Sandians by line fishing or speargun fishing recently.

Marcel Schiess (2332) and Jack St. Clair (2561) took along their skin diving gear on the recent trip to Guaymas, Mexico. Bill Martin (3111) stayed above water level.

Off the entrance to San Carlos Bay, Jack shot an 82-lb. grouper that required the assistance of Marcel to surface. When shot at about 20-ft. range, the half-inch diameter, solid-stainless-steel spear was bent by impact. Much of their spear fishing was done at the 55-ft. level, where the light begins to dim underwater.

Marcel reports the men saw two whales, both between 50-60 ft. long, numerous sea lions near San Pedro Island, and porpoise. Their line fishing was at levels down to 280 ft. Often the change in pressure between the depths and the water surface caused the fish to swell and otherwise show symptoms of the "bends."

## H. L. Davis Speaks At New Mexico State U

Students and faculty members attending the New Mexico State University Physics Colloquium on Mar. 20 heard a presentation by H. L. Davis (5152).

Mr. Davis spoke on "Application of N-Body Techniques to the Theory of Antiferromagnetism."

## Ex-Our Gang Star Appearing At Coronado Club Social Hour Today

Tickets are still available for the Coronado Club's "Fiesta Mexicana" which will be held next Saturday, Apr. 21, 6 p.m. to 1 a.m. Admission price is \$2.60 for members, \$3.60 for guests, and tickets may be obtained at the Club office. Social hour prices will prevail during the buffet from 6 to 8 p.m.

"Fiesta Mexicana" will feature a Spanish-style buffet, entertainment by Valentino DeLao's trio, plus a dancing senorita, and dancing to the music of Sol Chavez.

There will be special entertainment at tonight's Social Hour. Don Marlowe, whose comedy act will be on the Ed Sullivan Show in June, will perform for Club members and their guests. Don was a smash hit when he appeared at the Club's Social Hour on Feb. 16. He's been in dozens of movies and TV dramas, and many years ago was featured in the "Our Gang Comedies" films. Despite this featured entertainment, there will be no advance in Social Hour prices.

The annual Charity Bridge Night will be on Thursday, Apr. 19. Regulars of the Thursday night bridge group are encouraged to bring guests. Play starts at 7:30 p.m., and the fee is \$1 per person. Proceeds will go to this



Reba Hitchcock (4153)

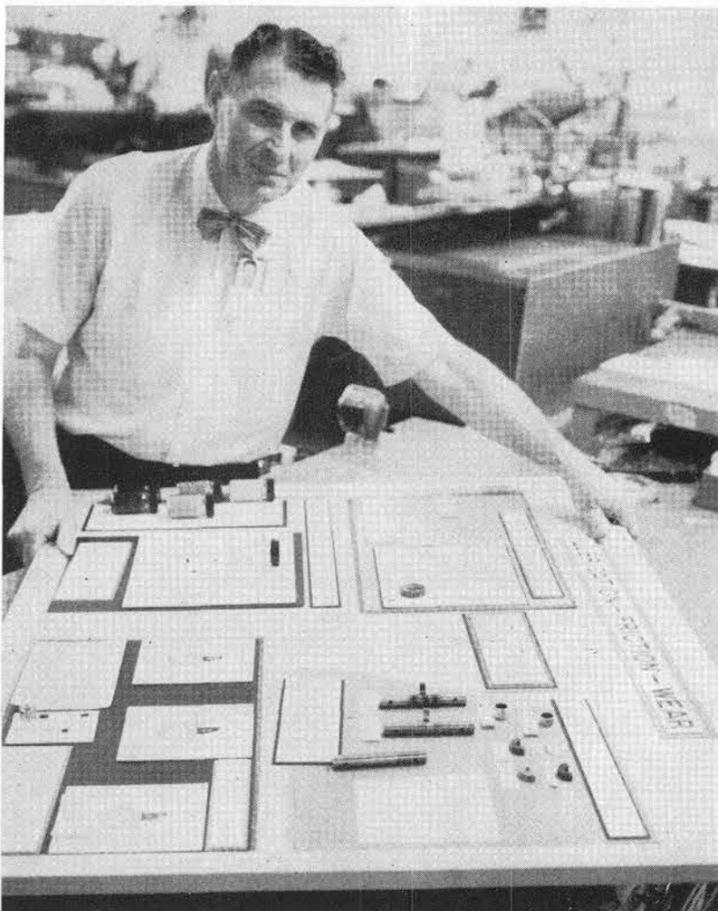
## Take a Memo, Please

Twisting the body while lifting is just another way of asking for injury. Don't do it.

year's charity—the National Kidney Disease Foundation.



FEATURED entertainer at this evening's Coronado Club Social Hour will be Don Marlowe, who has appeared in movies and TV dramas, and who was featured, years ago, in "Our Gang" comedies.



PARTIALLY completed display board is exhibited by Don Saunders of Technical Art Division 3463. Twenty-five displays, for use by various Sandia Lab organizations have been completed by Division 3463 in recent months, and several others are currently underway.

## Artist Exercises Many Talents in Making Industrial Display Boards

"Construction of an industrial display board involves some of the same artistic principles that apply to commercial art in general," Donald P. Saunders of Technical Art Division 3463, commented. "But the subject matter and technique are, of course, much different."

Tech Art Division 3463 designs and constructs displays of methods and materials used by different organizations at Sandia Laboratory. Don is currently at work on a series of boards for Materials and Process Organization 1100.

Each board must communicate ideas and information pertinent to the materials and processes it displays. "We strive to maintain the artistic integrity of the display at the same time," Don said. "We try to balance the various elements on the board. In using color, we utilize complementary combinations that are balanced, and that enhance the materials in the display. And, of course, we see to it that the display has continuity and that the parts of the display are inter-related."

## Discussions Held

Before construction starts, a series of discussions is held with research personnel who work with the materials to be displayed. One of the artist's first steps involves

simplifying the highly-technical terms which are often used in talking about a material or process. "We work with the research people in laying out and simplifying the display. The emphasis is constantly on simplicity since the board is often viewed by people who are not technically trained in the subject covered by the display," Don explained.

After the artist has studied the materials and techniques to be displayed, construction begins. The major segments of the display are first positioned on the board. Then, "roughed-out" sketches of certain parts of the display are positioned, along with samples of materials and finished components. A printed notation explaining the over-all display is placed on the board, and printed explanations of various segments of the display are added. Technical drawings and flow diagrams, often in color, are used to explain the functions of equipment being displayed.

## Several Week's Work

The amount of time devoted to a display depends on its complexity and detail. Then as time passes and processes are changed, the boards are revised and updated.

Division 3463 has constructed 25 display boards during the past few months. Of these, 11 are large boards intended for use as permanent displays. Fourteen are small, portable displays for use by speakers in illustrating their remarks. "We feel that the displays perform a real service in presenting highly-technical and complex operations," Don concluded.

## Puerto Rico Vacation Ideal If You Don't Have Hotel Expenses

A late March vacation in the West Indies sounds ideal. Sandra Borgrink (3121-2), who just returned from such a trip, reports that the temperature was in the 80's and Puerto Rico was going into its "dry season"—it only rained twice in two weeks.

Sandy flew to Miami, stopped a few hours in Jamaica, and for a shorter period in Haiti. The airport at Ciudad Trujillo, capitol of the Dominican Republic, was crowded with gun-carrying policemen.

San Juan, Puerto Rico, her destination, turned out to be a sprawling place roughly the size of Denver. "The people are solidly behind the governor and his slum clearance program," she said. "There's no great statehood faction." One of the large apartment projects provides housing for about 12,000 people and the families pay rent according to their income.

The food was bland, not at all like native New Mexico food. "In fact," Sandy recalled, "they didn't even know the word 'frijoles'."

In summing up her trip, Sandy said, "Puerto Rico is a wonderful place to visit — if you have friends you can stay with. Otherwise the prices are exorbitant. Many new hotels are being built but they're not aiming at the middle classes with room prices running \$35 a day and up."

## Congratulations

## Born to:

Mr. and Mrs. R. H. Cleveland (4412-4) a daughter, Carol Ann, on Mar. 8.

Mr. and Mrs. Ken Harrington (2441) a son recently.

Mr. and Mrs. C. A. Coonce (7131) a daughter, Carol Ann, on Mar. 9.

Mr. and Mrs. E. C. Rightley (7133-2) a son, Michael Joseph, on Mar. 27.

Mr. and Mrs. Thomas R. Thompson (2644-2) a daughter, Laura Ellen, on Mar. 5.

## Herminio Baros Died March 31

Funeral services were held last week for Herminio Baros (7243-2), who died Mar. 31 after a lengthy illness. He was 40.

Mr. Baros had been at Sandia 10 years and was a Staff Assistant, Technical. He had been on a leave of absence for the past year.

Survivors include his widow, four daughters — Marguerite 14, Victoria 13, Jacqueline 10, and Rose Marie 4 — and his mother.

## Sympathy

To F. G. Gabaldon (4573) for the death of his father in Belen Mar. 18.

To Orlando Sanchez (4573) for the death of his father in Los Lunas Mar. 25.

To Jose Gallegos (4575-2) for the death of his father-in-law in Albuquerque Mar. 25.

To Roy T. Lovin (4511-1) for the death of his father-in-law in Oklahoma Apr. 2.

To Pauline Frey (7243) for the death of her mother-in-law last week.

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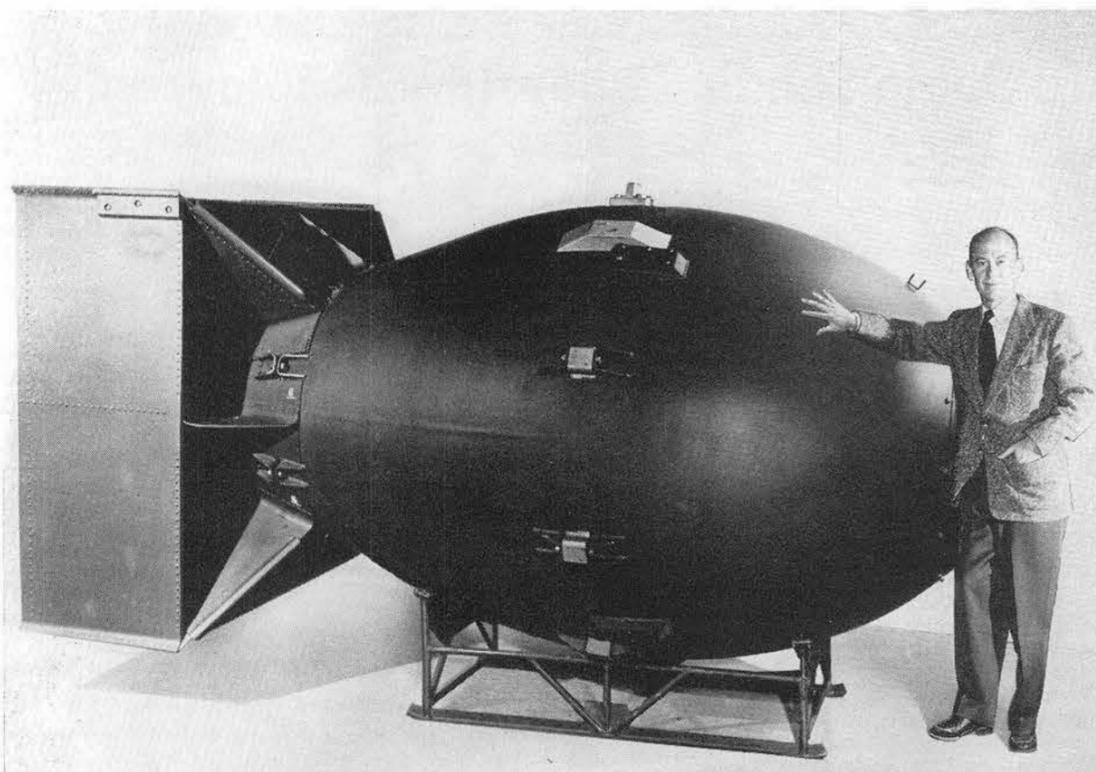
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ARTHUR B. MACHEN, Director of Military Liaison 2300, and an early atomic weapon "Fat Man." The Sandia Lab News artist superimposed Mr. Machen's likeness on this photograph which was

released by the Atomic Energy Commission and the Department of Defense in 1960. Mr. Machen was a member of the Los Alamos Scientific Laboratory weapon team on Tinian Island in August 1945.



MILITARY MANUAL PREPARATIONS begin early in the development stages of a weapon system. Here writer William H. Swiss (2323) confers with Howard M. Jones (right) of Project Division 7124 about handling equipment use with a weapon project.

Continued from page one . . .

## Weapon Veterans in Military Liaison

soon as the designer conceives a new weapon. As development progresses, the instructors prepare training aids, audio-visual aids, and written material. Long before the operational date of each weapon, military-instructor training begins and will continue until weapon retirement.

"This outstanding staff of 17 instructors," Mr. Moore commented, "is comprised of men with a wealth of instructional experience and technical background. A majority have advanced degrees in electrical, mechanical, and industrial engineering, or physics."

Most weaponry training is conducted in the special training facilities of Bldg. 892. However, Sandia instructors roam "the biggest campus in the United States" in presenting new material, and auditing training information and classes at the numerous military training bases throughout the country.

"We are interested not only in the initial training of military instructors but also in assuring that required technical information is maintained in a current status at all times," Mr. Moore said.

The Weaponry Training Department is also responsible for coordinating the Corporation and military participation in an initial operational check-out of each weapon system. During this Joint Task Group operation (JTG), a typical military team and associated military and Sandia observers take a critical look at every operational aspect of the stockpile-to-target sequence.

"The JTG operation provides the Corporation with the first intra-laboratory look at a complete weapon system from an operational viewpoint, as well as

giving military field personnel an early opportunity to become familiar with the weapon, ancillary equipment, and procedures," Mr. Moore said.

If modifications or improvements to stockpile weapons are required, Department 2310 convenes a Corporation Task Group (CTG) to review the equipment and procedures related to the retrofit to assure a smooth operation in the field.

Spare-parts provisioning for weapon system and associated equipment is also a responsibility of 2310. A complete knowledge of weapon systems and anticipated material attrition rates are tools utilized by the spares analysts in determining the items to be designated as spares for delivery concurrently with the weapon.

### Military Publications Department

G. C. Hollowwa, 2320 department manager, joined Mr. Machen in January 1947 to help establish the first laboratory-military school for atomic "weaponers." Previously he had been a member of the special Army Air Force B-29 group that trained at Wendover, Utah, to deliver the first atomic weapons. Mr. Hollowwa became an instructor for this group and joined Sandia after discharge from the service.

As production weapons became available and were assigned to the various branches of the Armed Forces, a need for a unified manual system was apparent. The Joint Special Weapons Publications Board was created by the cooperative effort of Sandia Corporation, Atomic Energy Commission, Los Alamos Scientific Laboratory, Field Command/Armed Forces Special Weapons Project, Army, Navy, and Air Force to fill this need.

From specifications created by the JSWPB, Military Publications Department produces military field manuals or operational handbooks which index into the filing system of any using agency. The manuals contain all procedures necessary for the preparation and maintenance of a special weapon system through its lifetime.

Manual writing begins in the early development stages of the weapon. The writer confers with design engineers and studies available drawings. As the weapon develops, the writer is converting technical data into language familiar to the military user. Manuals must be delivered with the first production units of the weapon.

The 28 technical writers of Department 2320 currently write and maintain a wide variety of manuals. As technology advances, changes are made in the systems which call for retrofit instructions and updating the manuals. Military requirements and changes in tactical uses can also call for a manual rewrite.

In addition to military manuals, writers also prepare several other types of manuals for production uses. These manuals cover the operation, maintenance, and calibration of production test equipment.

"Few authors can claim a more dedicated readership," Mr. Hollowwa said of Sandia's tech writers, "and few authors are as meticulous. We deal daily with the responsibility of providing accurate information that will assure that the men who handle weapons can do so with safety, reliability, and confidence."

### Field Force Department

"A Sandia Corporation field engineer," said Robert A. Knapp, Field Force Department 2330 manager, "is a cross between a highly qualified engineer and a diplomat. He works in the broad interface between military operations and the AEC in the area of atomic weaponry. He is a global troubleshooter who logs thousands of miles annually. He works in a highly technical area dealing with operational and material problems of nuclear weapons employed in the field. He must also relay information from the field to the design organizations at Sandia, and effectively follow through the solution of complex problems."

Many of the visits to Service installations by Sandia field engineers are routine. It is important for any design agency to have a first-hand knowledge of its products in use. Other visits are "problem calls" on specific

technical questions, and the remainder are retrofit operations. A Sandia field engineer is usually present during intricate rework of weapons in the field to furnish assistance as required.

Department 2330 works with the military in planning for repair and modernization programs for weapons in the field. It also is responsible for assuring that changing military operational concepts are covered in field procedural instructions.

A little-publicized responsibility involves the handling of "customer complaints." The military questions about product or publications are forwarded to the Field Force Department on Unsatisfactory Report forms. These are answered with details of the corrective action that will be taken.

Mr. Knapp is another old-timer in the weapons business. He joined Los Alamos Scientific Laboratory during the preparation for the 1946 nuclear test series "Crossroads." He performed aircraft compatibility engineering for this series and in later test series had responsibility for weapon assembly.

"Field Operation engineering was started in June 1951," Mr. Knapp said, "and the job gets larger each year as more weapons are deployed. In staffing this job we look for men with mature judgment and who are well qualified in weapons engineering. They handle Sandia's 'customer relations' and, in this business, the customer is responsible for the defense of our country and the lives of our citizens."

### Product Acceptance Department

Another kind of customer relations is performed by men of Product Acceptance Department 2340. This is the function of Sandia Corporation being the customer. Weapon material is produced in plants throughout the United States to specifications laid down by Design, Development, Manufacturing Development, and Quality Assurance organizations.

Department 2340 has acceptance responsibility of this material for Sandia Laboratory and responsibility for certification and submittal of the material to the AEC.

William E. Caldes, 2340 department manager, said, "Our job calls for high technical competence and an entirely objective viewpoint backed up with advanced sampling techniques, test equipment, analysis, inspection methods, and proven procedures."

From five field offices—in New York City, Chicago, St. Louis, Beverly Hills, and Hartford—Sandia Corporation field representatives

regularly make their rounds of supplier's plants in some 30 states. In addition, 2340 personnel staff the secondary standards laboratories in the field offices and maintain and calibrate the production test equipment used by Sandia inspectors, supplier personnel, and AEC product acceptance personnel.

At Sandia Laboratory, other 2340 engineers work to provide the advanced technical operating procedures used by field representatives. They perform continuous analysis and reporting of inspection results.

Another function of 2340 is the evaluation of tool-made samples (TMS) of all Sandia Laboratory weapon systems prior to production. A 2340 engineer heads the TMS team of design and manufacturing engineers who look at the first runs of weapon systems.

This TMS team analyzes system requirements and determines how well the product conforms to specifications and design intent. The team also evaluates the supplier's facilities, tools, processes, and controls. They examine acceptance methods and equipment to determine if the supplier can furnish product of the quality and quantity required.

Mr. Caldes has the distinction of being Sandia's "oldest" employee in terms of service to the Corporation. When LASL established facilities at Sandia Base (which later became Sandia Corporation), Mr. Caldes was a group leader in charge of electrical inspection in 1948 and has since worked in Field Testing and Quality Assurance.

"After years in the weapons business," Mr. Caldes said, "you get to be single-minded in your purpose. Sandia products have to be the very best. There is no room for a marginal product."

### Important Factor

"Experience is an important factor in the Military Liaison business," Mr. Machen said. "Our long continuity in all aspects of weapon engineering gives us a background that is invaluable in handling military relations."

"While research, development, and engineering are the 'heart' of Sandia Corporation's operation, it is equally important to have an organization familiar with every aspect of the current stockpile and be able to fit Sandia's products into existing military logistic, operational, maintenance and preparation practices. This is the final step in fulfilling the AEC's responsibility for nuclear weapon armament."



AT SANDIA'S St. Louis field secondary standards laboratory Kenneth R. Tuma (right) talks with John G. Wimpling, supervisor of St. Louis Field Area office 2341-5. Sandia has similar installations in Beverly Hills, Hartford, Chicago, and New York City.

## Special Committee Planning Future Of Sandia's Research Colloquium

A four-man permanent committee has been working since last Fall to formalize the purpose and simplify the details of Sandia Laboratory's Research Colloquium.

The committee is operating with a rotating chairman—each member serving for five months. W. B. Law (5131) recently assumed chairmanship, replacing R. T. Meyer (5153). Other members of the committee are Crawford MacCallum (5111) and J. D. Hankins (5422). Diane Martin (5132) is permanent secretary.

General purpose of the Colloquium is to "keep Sandia Staff Members informed of recent advances and interesting topics in the basic and applied sciences and of theories, problems, and policies of national defense and nuclear energy pertinent to the research and development programs of Sandia Corporation."

To accomplish this, the colloquium programs have been separated into three categories. About 30 per cent will be scientific colloquia of broad general interest; 40 per cent, research colloquia of specialized interest; and the balance, such things as management talks on Sandia's present and future, discussions on weapons, and public affairs.

The committee meets monthly to review suggested speakers and to discuss any proposals of their own. An attempt is made to schedule several months in advance two of the three monthly speakers. The third date is left open for "speakers of opportunity"—someone already scheduled to visit Sandia for another pur-

pose, or a speaker available unexpectedly. Between 10 and 20 per cent of the colloquia speakers are from within Sandia. An arrangement has also been made with the University of New Mexico for joint sponsorship of four colloquia per year to be held at the University campus.

## Visitor From Japan Impressed With U. S. Hospitality

W. H. Kingsley, supervisor of Environmental Health Division 3311, and W. C. Hunter, supervisor of Reactor Facilities Division 5311, were hosts Mar. 16 to T. Matsubara, a physicist from Japan.

Mr. Matsubara is a research associate in the Shimizu Laboratory of the Chemical Division of Kyoto University. He was principally interested in the SERF irradiation cell and Sandia's health physics program.

After spending some time at Oak Ridge National Laboratory, Mr. Matsubara stopped in Albuquerque on his way to the atomic installation at Idaho Falls, Ida.

When asked about what he thought of this country, Mr. Matsubara stated that what he had seen of it was very beautiful. He had enjoyed the Great Smoky Mountains and was looking forward to the Grand Canyon. He also stated that he had been most favorably impressed by the hospitality of American people and with the general living conditions in the United States.

## Proper Use of Dictating Machines Will Be Taught Sandia Employees

Communicating vital information, knowledge, and ideas in written form may involve considerable time when written in long hand. This is time that could be used more efficiently.

To develop familiarity with dictating machines, Technical and Trades Training Division 3132, is offering a 10-hour training course for small groups during working hours.

Taught by J. M. Zanetti, Jr., and Harvey Frauenglass (both 3423-1), the course is divided into three parts. Jean Gillette (3132-2) wrote the handbook which is used for the Technical Dictation course.

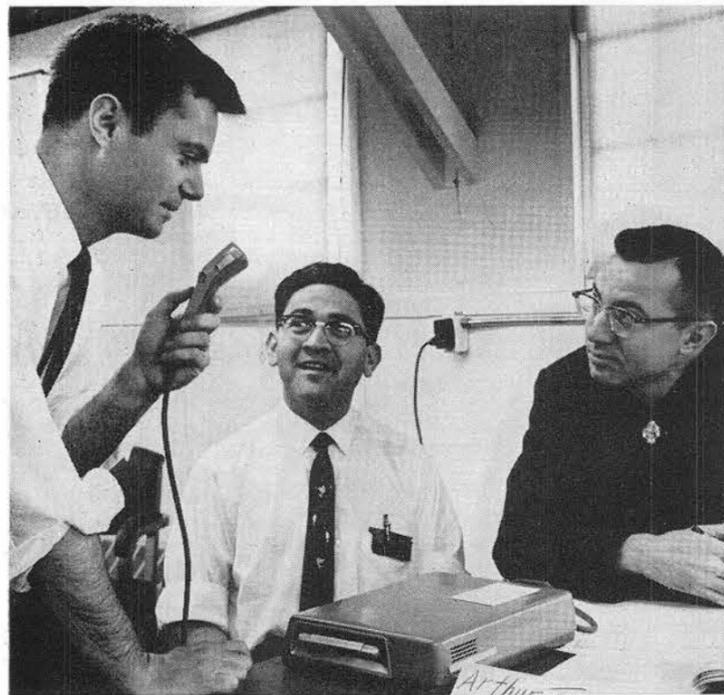
The first part of the course deals with mechanical skills—how to actually operate the controls of a dictation machine.

This is followed by a discussion of techniques of dictation—how to give instructions to the typist;

how to dictate changes and corrections; how to indicate punctuation, capitalization, tabulation, headings, etc.

The final hours of the course are devoted to basic rules of organizing thought and materials in preparing to write—how to convey your oral thoughts to paper without writing drafts by hand. This involves developing the ability to get information from thoughts to words (from mind to microphone) and to express the facts in a logical manner. For simpler memos and letters, a skilled dictator may be able to organize much of his material mentally. However, in dictating technical material of complex nature, some kind of outline will be necessary for the average dictator.

A similar course has been offered at Livermore Laboratory in the past, and plans call for offering the new course soon.



PROPER DICTATING TECHNIQUES are explained by instructor Harvey Frauenglass (3423-1) to Arthur Troum (1112-2), center, and Al Smailer (2563). The 10-hour course in Technical Dictation is offered by Technical and Trades Training Division 3132.

## New Film Badges Now Being Issued To Some Sandia Laboratory Employees

A new film badge program is being instituted at Sandia Laboratory by Environmental Health Division 3311 and will start with the exchange of all metal film badge holders for improved plastic models.

The improved holders contain an open window and three filters—aluminum, copper, and a tungsten-cadmium combination—which make possible determining the average energy of the X or gamma radiation exposure to the film. With further investigation, the beta and thermal neutron exposure can also be determined.

### Coded by Color

A color code, embossed on the film, will be visible in the open window when the film is properly inserted. This color will be changed monthly, thereby assisting health physicists in detecting overdue badges.

The density (exposure) of the film will be measured on a new film densitometer in Bldg. 830 and the information will be automatically punched on IBM cards. This data will be interpreted by the 7090 computer and be tabulated in reports designed to comply with AEC directives governing radiation exposure records.

Sandia Lab employees required to wear film badges will continue to receive them at either two- or four-week intervals. Division supervisors are sent at regular periods an exposure record indicating the amount of radiation received by their employees during the previous two- or four-week period, the previous 13 weeks, the calendar-year-to-date, and the accumulated lifetime exposure.

### Radiation Evaluation

The new program permits a qualitative as well as a quantitative evaluation of the X or gamma radiation that is incident on the film badge. This information is desirable since the sensitivity of the film is dependent upon the energies below 200 kev (200,000 electron volts).

Materials and Process Department 1110 and Electronic Data Processing Department 3450 have been instrumental in helping the Environmental Health organization in getting this program in operation.

## L. J. Vortman to Speak Before IRE On Protection from Nuclear Weapons

Luke J. Vortman of Underground Physics Division 5112 will speak on "A Risk-Oriented Approach to Protection From Nuclear Weapons" before members of the IRE. The meeting, to be held at 7:30 p.m., April 17, at the Albuquerque National Bank, 4401 East Central, is sponsored by the IRE Professional Group on Nuclear Science.

In view of current interest in fallout and blast shelters, the PGNS Group has invited both members and non-members to attend the meeting. Mr. Vortman's talk will include comments and estimates of cost figures for shelters to withstand various magnitudes of blast pressure.

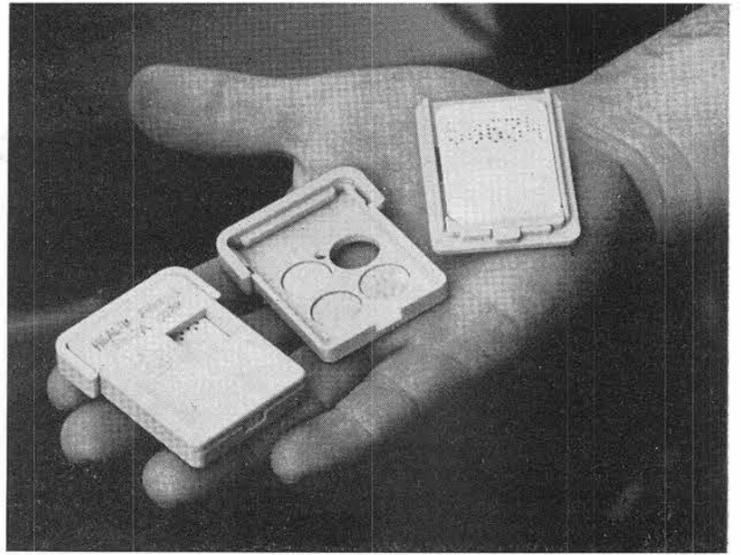
Mr. Vortman is a member of the Subcommittee on Protective

## A. Y. Pope Moderated Panel At Symposium In Denver Last Month

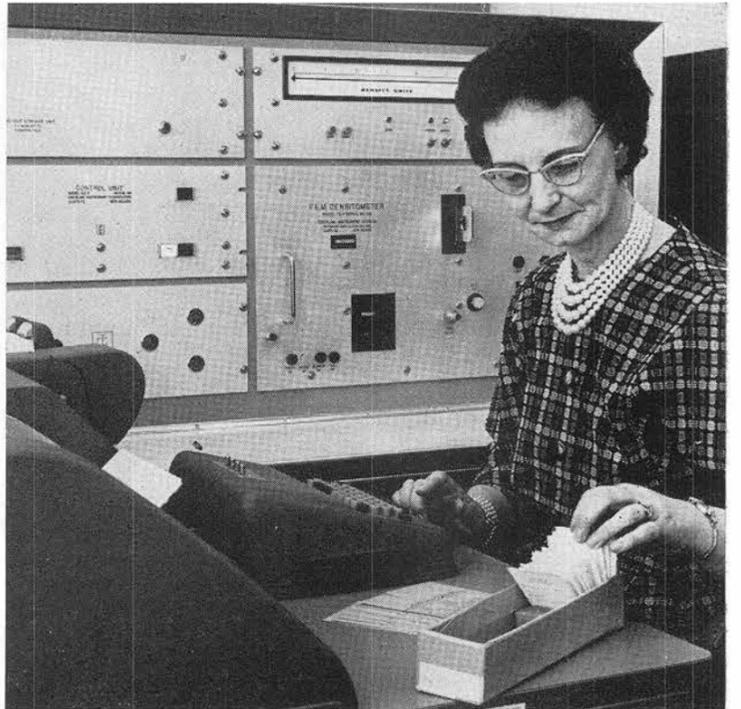
During the Second Symposium on Hypervelocity Techniques, conducted by the University of Denver, Mar. 20-21, A. Y. Pope (7130) was moderator of the panel meeting on "Hypervelocity Tunnels."

The panel participants were Jack Andes, Cornell Aeronautical Laboratory; G. Fonda-Bonardi, Space Science Laboratory; F. E. Gowen, NASA; and F. L. Clark, NASA.

The symposium was attended by approximately 200 scientists, 20 of whom were from foreign countries.



DISASSEMBLED FILM BADGE shows three filters and code on film visible when film is properly placed in new plastic holder.



NEW FILM DENSITOMETER, operated by Rita Hodgden (3311-2), measures the X or gamma radiation exposure to the film within the new badges. This information is automatically punched on IBM cards as employees' lifetime radiation exposure records.

## H. W. Maglidt Observes 25 Years Service With Western Electric Co.

H. Wilson Maglidt, manager of Graphic Arts Department 3460, marked 25 years of service with



Mr. Maglidt

the Western Electric System on Apr. 5.

He was employed by Western Electric in 1937 in the Point Breeze Plant, Baltimore, Md.

Mr. Maglidt was sent to Sandia with a department management team in early October 1949. "I was supposed to be here a limited time," he explains, "but I've often heard that the longest assignment is often a temporary one. I plan to finish out my Bell System service in New Mexico and retire here."

Mr. Maglidt received a BS degree in management engineering from Johns Hopkins University and a Master's in economics from the University of New Mexico.

In both Albuquerque and Baltimore, Mr. Maglidt has been active in working with young people—in scouting and camping, primarily.

His hobby is genealogy and his favorite pastimes are golfing and duck hunting.

## Supervisory Appointment

THOMAS J. HOBAN, JR., to supervisor of Ordnance Test Projects Division II, 7212, Development Test Department.

Tom has worked in Field Testing during his 11 years at Sandia. For two years he headed the Air Force Operations Section at Cape Canaveral, Fla., and has been with Telemetering Component Control Section for five years.

He came to Sandia direct from the University of New Mexico, where he received a BS degree in electrical engineering.

While serving with the Navy for two and a half years, Tom was a radar and sonar technician.

He is a member of Sigma Tau, engineering honorary.





FIVE YEARS of out-of-doors labor went into building the 10-room home of Glenn Folkins above. Adobe walls have been covered with "brown coat" of plaster but painting still remains to be done. Glenn estimates house will receive its finishing touches in a matter of about 18 months.

## Hand Made Hill-Top Home Gives Owner Glenn Folkins Striking Valley View

Perched on top of a hill overlooking Placitas, N. Mex., is the 10-room home of Glenn O. Folkins (7124). Five years of back-breaking effort put it there.

"If I had known what I was getting into," Glenn says, "I probably would not have built the house."

In the evenings, he can stand in

his living room and watch the sunset behind Mt. Cabezón and see the Sangre de Cristo mountains and the lights of Los Alamos. He feels it is worth the effort.

Glenn's living room, which measures 18 x 26 ft., has two large thermal pane picture windows facing north and west. He can see for miles along the Rio Grande valley.

The north end of the Sandia mountain range provides a dramatic setting for the house.

Glenn's home contains 2400 sq. ft. of space. In the two-room basement are another 600 sq. ft. Construction was started in 1956. With the exception of site excavation, pouring concrete for the basement, plastering, and making the adobe bricks, Glenn did the entire construction job himself.

"The most difficult job," he says, "was digging the pipeline ditch from the well at the bottom of the hill to the house. It was about a mile through practically solid rock." He used dynamite to open some spots.

The house contains living room, dining room, kitchen, three bedrooms, den, utility room, and the two basement rooms, as yet unfinished. Also in the construction stage is a two-car garage.

"It should be finished in about 18 months," Glenn estimates. "There's a lot of work remaining—doors on closets, paneling in the den, baseboards, and outside landscaping."

"But we love it here," his wife, Viola, says. Vi worked for five years as a secretary to Department 4110 before "retiring" to have her family. Their two boys, Bruce and Brian, are now five and three years old.

"Placitas has always been my home," Vi says. "My family lives here, too. We like the schools and the village. There's a closeness here that I think you can find only in a very small town."

Albuquerque is only 40 minutes away by car.

Glenn worked on the house three years before the family moved in. "We had the shell finished and the furnace installed," he says, "but all the interior work remained."

He is particular about the finishing work. The kitchen is a masterpiece of modern efficiency. The large bathroom is beautiful with inlaid tile. The second bath reflects careful planning. Large closets and storage space are plentiful. The living-room fireplace is a large, smooth expanse of light-colored brick.

Glenn had experience as a carpenter's helper when he helped his father build a house back in Spokane, Wash.

"But I still didn't know what I was getting into," he says. "I remember crawling into bed so tired I could barely move. What a lot of work! And there's still more to go."



MAGNIFICENT VIEW from the Folkins' living room is a panorama of the Sangre de Cristo mountains, Rio Grande valley, and Mt. Cabezón. Giant picture window faces north and west.



STEEP WINDING ROAD leads up the hill to Glenn Folkins' home. In the background is the north end of the Sandia Mountain range.



MEMBERS of radiation safety class pay careful attention to George E. Harwood's explanation of G. M. tube-type radiation detector. Group is second to attend class, taught by George Harwood, George Tucker, and William Burnett (all from 3311-2).

## Radiological Safety Training To Be Taught by Sandia Health Physicists

An in-hours training class in radiological safety is currently being established by Health Physics Section 3311-2 and In-Hours Training and Education Section 3132-2. Teaching the course are George E. Harwood, William D. Burnett, and George E. Tucker (all 3311-2).

"Employees enrolled in the course operate and maintain X-ray equipment and other radiographic sources," Mr. Harwood explained. "Others handle bare radioactive elements during environmental tests, and some work with leak-detection apparatus which employs radioactive Krypton as a tracer element. Also currently enrolled in the course are two newly-hired health physics personnel who will be involved in electronics work and calibration of radiation instruments."

The course covers the following topics: radiation fundamentals, radiation exposure, biological effects of exposure, radiation protection, radiation instruments, X-rays, specific problems such as leak detection and contamination, and emergencies.

"The course is tailored to the needs of personnel who need to know the principles of radiological safety to perform their jobs," Mr. Harwood continued. "We present the course in five two-hour sessions. Beginning next Fall, we'll offer a 16-week course—similar to the present one—as part of Sandia's Out-of-Hours Training Program."

The new course will be given to

Sandia employees who have need for the training. While it is based upon the present course, its longer duration will permit a more detailed survey of basic radiological health principles. "We feel it will be a valuable and interesting addition to the out-of-hours training courses available to employees of Sandia Corporation," Mr. Harwood concluded.

## Service Awards

### 15 Year Pins



Herbert J. Jewett  
4221  
Apr. 10, 1947



William V. Hereford  
7215  
Apr. 23, 1947



William T. Moffat  
7240  
Apr. 22, 1947



Charley C. Bates  
4224  
Apr. 24, 1947

### 10 Year Pins

Apr. 13-27

Helen M. Balistrere 4151, G. H. Brington, Jr. 7321, W. L. Hyde 7215, E. A. Krahling 4232, L. F. Narvaiz 4132, W. G. Smith 4153, William White 4171, G. E. Cunningham 4514, James Dickie 4221, H. V. Lewis 2642, Audilio Barela 2634, J. J. Platt 2531, J. H. Davis 7124, Cassimero Baker 4221, Estella B. Chavez 3126, H. M. Warden 3442, Mary R. Strickland 8212, B. G. West 2642, Florencio Baca 4574, C. E. Sandy 1432, R. H. Watkins 8161.

## L. J. Heilman Elected To City Commission

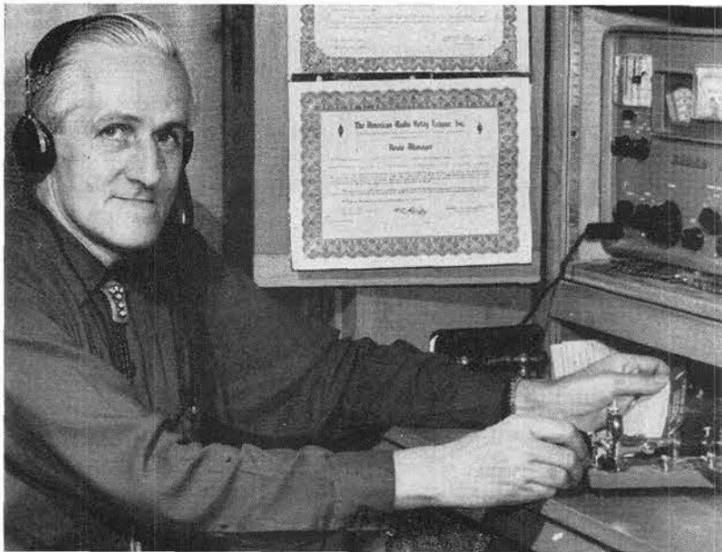
L. J. Heilman, Director of Programming 2600, was elected to the Albuquerque City Commission Apr. 3. Mr. Heilman will serve a four year term in the position.

He was a member of a three-man slate of officers presented to the voters by the Albuquerque Citizens' Committee. Other members of the Citizens' Committee ticket, Archie Westfall and Sam E. Brown, were also successful candidates.

## Welcome Newcomers

Mar. 26-Apr. 6

Albuquerque	
*D. Corinne Adams	4623
Thomas E. Arquello	3444
J. B. Baskett	4574
Patricia H. Bagin	2341
Patricia M. Burt	4333
Janet F. Capaldi	3341
Margaret B. Cardwell	3126
Catherine C. Cofer	3126
Sharon L. Daniel	5426
*Robert E. Dunlap	3420
Mary K. Dunn	3126
Margaret P. Gabaldon	4132
Phyllis A. Wilson	3421
Norma J. Woelhart	3126
Pennsylvania	
*Lee D. Stull, Canton	1322
Texas	
*John M. Michaels, Austin	7125
* Denotes rehired	
Returned from Leave	
Agnes F. Biorosak	4423
Mary A. Hunter	3446



VETERAN of nearly 40 years of amateur radio operation, Carl W. Franz (1321-1) recently received Public Interest, Convenience, or Necessity Award from ARRL's Rocky Mountain Division.

## Two World Wars Have Interrupted Carl Franz' Amateur Radio Work

"In amateur radio operation, as in any communications work, no man ever does a job without help from other people," Carl W. Franz (1321-1) commented recently. On Mar. 28, Mr. Franz received the Public Interest, Convenience, or Necessity (PICON) Award from the American Radio Relay League's Rocky Mountain Division.

The ARRL Rocky Mountain Division includes Utah, Arizona, New Mexico, Colorado, and Wyoming, and it presents the award yearly to an amateur operator in the area who has performed outstanding service in the public's interest. Mr. Franz is the first New Mexican to receive the award in several years.

The PICON award is the latest of a long list of distinctions Mr. Franz has received for his radio work. He has operated an amateur station for nearly 40 years.

"I became interested in radio as a boy in 1912," Mr. Franz recalled. "Then, radio equipment was less sophisticated than it is today, but the enthusiasm of radio 'hams' around the country was the same as it is now."

### War-Time Problems

Amateur radio operators are required to leave the air during times of war. "I had to sign off for the duration of World War I," Mr. Franz recalled. "And I was disappointed. But I began again at the end of the war."

With the advent of World War II, Mr. Franz again went off the air. "But the nation's growing Civil Defense program soon enabled some amateur operators to perform a valuable service," he pointed out. "The Radio Amateur Civil Emergency Service, called RACES, was established to act as an emergency communications arm for Civil Defense. The RACES network remains on the air in times of hostility."

Mr. Franz has devoted much effort in recent years to the de-

velopment and training of emergency communications groups. He is presently an emergency coordinator for the ARRL, which sponsors the Amateur Radio Emergency Corps for Albuquerque and Bernalillo County. Mr. Franz was recently elected Section Communications Manager (League) for the State of New Mexico.

He is a member of the RACES Albuquerque - Bernalillo County administrative staff and a Civil Defense staff member. His station has been designated a message collection station for the Red Cross Mutual Aid Net, a national emergency network.

### Disaster Time Help

During the past five years, Mr. Franz has provided services during local disasters involving floods and missing persons. In 1958, he received a Public Service Award for an all-night communications situation when flood waters cut off telephone services to three Albuquerque hospitals.

Together with two other Sandia Corporation RACES operators, R. A. Erickson (1331-3) and C. H. Senter (1424-3), he was cited by the Atomic Energy Commission for services performed during Operation Alert 1961. The citation noted that "his personal interest in emergency disaster communications, technical skill as a RACES operator, and organizational ability in the pre-planning of this project, in large measure, contributed to the successful results." Mr. Franz has also served as a consultant to the AEC in amateur radio emergency communications.

Along with his years of public service, Mr. Franz has found time to continue broadcasting for the enjoyment of it. "The awards mean a great deal to me," he concluded. "But I also find great satisfaction in simply talking with people."



CHAMPION of the Sandia Laboratory singles table tennis tournament is Ernie Gurule (7321), center. He receives his trophy from Noble Johnson, supervisor of Services and Benefits Division 3122. At right is Jack Chavez (2634). Ernie won eight straight matches.

# U. S. Chamber of Commerce Measures Impact of Industry on Community

It would be an interesting research project to measure Sandia Corporation's side effects upon the growth of Albuquerque and Livermore.

Western Electric Company recently started construction of a new distributing house in Omaha, Nebr. When finished it will give employment to 200 people and provide an annual payroll of more than a million dollars.

The President of Northwestern Bell Telephone Company, A. L. Jacobson, who also heads the Omaha Chamber of Commerce, had some interesting words to say at the ground breaking ceremonies in regard to the impact industries have on a community.

He pointed out that the research

department of the United States Chamber of Commerce has studied the multiplying effects of new industry upon the economic growth of a community.

Based on such a study, here is some of the growth that can be expected from the addition of a firm employing 200 persons:

—350 new jobs will be created in the community.

—580 people will make the community their home.

—They will establish 224 new households.

—The school system will enroll 102 more children.

—Automobile registrations will be increased by about 215.

—Bank deposits will increase \$540,000.

—The community will have a \$1,180,000 raise in personal incomes.

—Retail sales will be increased some \$700,000.

—About eight new retail or service establishments open their doors.

—Taxable property will increase by \$3,000,000.

A bit less than 13 years ago Sandia Corporation was founded in Albuquerque. It has now grown to where it has about 6700 employees with a payroll of \$57,400,000 in Albuquerque. In addition Sandia Corporation's Livermore Laboratory has 980 employees with a payroll of \$7,500,000 in Livermore, Calif.

## Three Sandia Papers Will Be Heard by Physical Society

Technical papers will be presented by three Sandia Laboratory men during the American Physical Society meeting in Washington, D. C., Apr. 23-26.

J. R. Banister (5153) will discuss "Steady Flow of a Weakly Conducting Fluid Propelled by a Moving Magnetic Geometry."

A paper by E. H. Beckner (5153) is entitled "Plasma Flow Through a Transverse Magnetic Field."

F. K. Truby (5151) will present his technical paper, "Electron Spin Resonance of Gamma-Irradiated Octadecyl Disulfide."

## Big Ten Alumni to Dine, Dance April 27

Tenth annual Big Ten dinner-dance in Albuquerque will be held Friday, Apr. 27, at the Four Hills Country Club. Festivities will get underway at 7 p.m. McCoskey's Dixieland All-Stars will furnish music.

Tickets, \$4.50 per person, may be obtained from H. L. Davis (5152), ext. 49273; W. L. Hammond (4343), ext. 21159; or D. R. Knapp (2331), ext. 37156.

All persons who attended any of the Big Ten universities are invited to attend.

## Sandia Paper Read To IRE Conference By Ralph H. Genz

Ralph H. Genz (1113-2) presented a technical paper at the Southwestern IRE Conference in Houston, Tex., this week.

The paper, "Frequency Dependence of Reentrant Coaxial Cavities upon the Physical Properties of a Terminating Disc," was co-authored by W. H. Hartwig, Associate Professor, University of Texas, when Mr. Genz was attending the university prior to employment by Sandia Corporation.

## Sandia, AEC Employees Serving on United Fund 1962 Budget Committee

Sandia Laboratory and AEC employees have been appointed new members of the 1962 United Community Fund Budget Committee. Martin E. Grothe (4150) and George D. Horne, Jr. (3451) are two of the 41 new members of the committee this year. New members from AEC include F. E. Abbott, C. A. Griffin, and J. B. McMaster.

Other members of the committee from Sandia Laboratory include Robert M. Hawk (4111-2), David S. Tarbox (3200), and Thomas E. Zudick (3465-1). William H. Chandler (3221) is chairman of the 1962 Budget committee.

William L. Martin (3111) is assisting the committee in the preparation of a guide to be used in considering the salary proposals of the various agencies of the United Community Fund.

## Sandia Speakers Appear on Career Day Program

Eleven Sandia Corporation employees spoke to 15 groups of students during Sandia High School's Career Day, Apr. 6. Each speaker gave a 35-minute presentation on his career field, followed by a 15-minute question-and-answer period.

Speakers and their topics included T. S. Church (1410), Electrical Engineer; E. H. Copeland (7321), Mechanical Engineer; R. E. Tate (7134-2), Aeronautical Engineer; W. C. Elskes (4511), Electrician; R. E. Fisher (1122), Chemist; M. M. Karnowsky (1121-1), Chemical Engineering, Metallurgy and Mining; G. H. Miller (5114), Physicist; P. A. Nicovich (4412), Draftsman; F. F. Norris (4541-1), Architect and Civil Engineer; W. F. Peay (4252), Machinist; and G. P. Steck (5425), Mathematician.



TWO HUNDRED AND ELEVEN linear inches of material which were cleaned from 23 desks of Personnel Development Division 3121 in a recent Clean-Out-The-Desks Campaign are measured by Maxine Schafer (3121). The campaign was carried out under sponsorship of Records Management and Services Department 3440.



CHAMPIONS of the Sandia Laboratory basketball association are shown above with trophies awarded last week. This AEC-5100 team defeated the combination team of 24-25-46-71-9100 by one point in recent playoffs. Members are from left Jack R.

Thompson (AEC), W. Dale McLachlan (5132), James F. Hudson, Jr. (5151), Louis H. Sanders (5151), James M. Freese (5153), Hiram H. Martinez (AEC), Alfonso G. Romero (AEC), and Lawrence G. Verzi (2642). Playoff game score was 30-29.

## Product Quality Upped With Audio-Visual Techniques

"Audio-visual techniques have been around for a long time," Joseph E. Taylor was saying, "and when they are adapted for use in manufacturing to improve product quality the Advanced Manufacturing Development Division 2564 is interested."

Joe was sitting in the operator's chair of a commercial production "station." The station was handily arranged with numerous bins, shelves, baskets and racks surrounding the operator's bench. On the small jig in front of him was bolted a printed circuit board. At eye-level was a small screen, part of an audio-visual device. Joe was wearing headphones.

"This device and others like it are accomplishing a small revolution in complex electronic fabrication," Joe said. "We've made a survey of its uses and results that have been achieved."

The audio-visual device combines a conventional 35mm photographic slide projector with a tape playback unit. The operator wears a headset and listens as step-by-step instructions are given him about the proper assembly of whatever unit is in production. The audio instructions are accompanied with slides that visually demonstrate each step of the assembly. Numbers, descriptions, dotted lines, and arrows can be used in the slides to give additional help to the operator.

"Manufacturers using audio-visual (A-V) devices report quality of the product is improved," Joe said. "In one typical instance the average defect-per-unit rate decreased by 90 per cent. Production may also increase as much as 25 to 30 per cent."

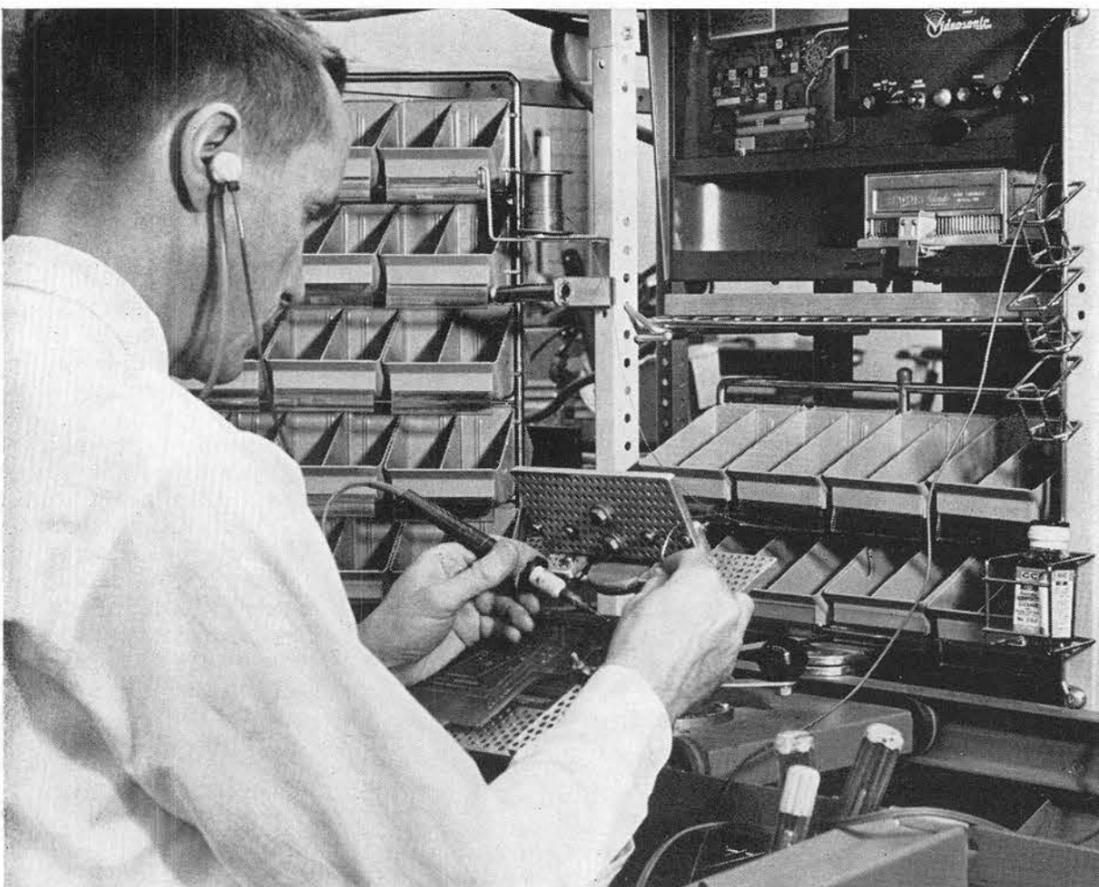
Listing other production advantages when using A-V devices, Joe noted that A-V speeds learning and enables the operator to produce while learning. A-V also makes it easier to produce items again later after the original orders have been filled. The A-V "program" is still intact and can be used whenever needed. Changes in the program can be easily and inexpensively made.

A-V can be used to transmit instructions to test and inspection personnel, and can also be used in indoctrination programs and other information dissemination.

"A-V demands very thorough preparation," Joe said. "There is more to it than just snapping pictures and cutting a tape. This thorough preparation forces the planner to make a detailed analysis of the production process, and benefits always accrue from such an analysis. There is a rule of thumb which says that 30 hours of preparation time are needed to produce one hour of A-V for the production line."

Division 2564 made the study of A-V use for possible applications in the production of Sandia-designed components. Joe has demonstrated the A-V system to several AEC integrated contractors. "With the cooperation of our suppliers," Joe says, "A-V could prove to be a valuable quality tool in some fabrication jobs."

Division 2564 is currently working with R. F. Utter (3132) to produce an A-V program on Sandia Corporation's positional tolerance dimensioning method. The finished "package" will be utilized in supplier orientation and instruction.



"VIDEOSONICS" device at eye level directly in front of Joseph E. Taylor (above) has been one of several audio-visual devices evaluated by Advanced Manufacturing Development Division 2564.

The device, developed by Hughes Aircraft Company, tells and shows an operator how to perform complex electronic fabrication, helps improve quality of product, and increases rate of production.

## Chess Players Decide Terms of Play

Sandia Lab Chess Group held its first meeting of the year Apr. 3 to elect officers and discuss organization.

Herman Levine (5150) was named president and Bob Smith (4421), vice president. Secretary will be O. J. Foster (3122).

Twenty-eight persons have ex-

pressed an interest in playing chess. If a meeting place is available during the noon hour, organization play on a challenge basis will be used to establish relative standings. For these games, a one-week time limit per game would apply, and games not finished during this time limit would be adjudicated.

## R. T. Meyer Reads Paper at Wisconsin U

R. T. Meyer (5153) presented a technical paper during a Physical Chemistry Seminar Mar. 20 at the University of Wisconsin Department of Chemistry.

The paper was entitled, "A Photolysis - Mass Spectrometric Method Gas Phase Chemical Kinetic Studies."

### 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

PUEBLO STYLE 3-bdr, 1 1/2 bath, LR, den w/FP, dining, large utility, NE location, VA appraisal, \$12,500. Cejka, 8509 La Palomita NE, 299-2441.

BICYCLE, \$15. Pitti, AL 6-1629.

TWO YOUTH BEDS, \$5 each. Rospopo, 299-4601.

SECTIONAL COUCH, \$65; Infant's chest, four-drawer, beige, aqua, \$85; adjustable dress form, \$7.50. Galbreath, DI 4-4306.

GOLF CLUBS, 2 woods, 4 irons, and bag, like new, \$28; 40-lb. bow and target, \$9. Gardner, 299-8455.

3-PIECE SECTIONAL, \$20; boy's suit, 12-14 yrs., tan, \$10; venetian blinds, 39 1/2" wide, 10 @ \$1.50; drapes, 4 panels, 4x7 w/cornice, \$9. Officer, AL 6-0337.

5 HP OUTBOARD MOTOR, 8 hrs. running time, \$85; Packard transmission, OD, \$10. Anderson, AX 9-4518.

WING-BACK COUCH, like new, upholstered in brown, beige, aqua, \$85; adjustable dress form, \$7.50. Galbreath, DI 4-4306.

'59 PONTIAC 4-dr., PS, PB, 1-owner car. Sanchez, AX 9-8722.

38 SPECIAL Smith and Wesson, 4" barrel, w/holster, shells, cleaning kit, \$50; 32 Winchester Special, Model 94, shells, \$50. Ingram, DI 4-5756 after 5.

FOX-HOWARD rotary type lawn mower, steel deck, adjustable cutting height, 2 1/2 hp Clinton 2-cycle engine, manual, \$18. Brian, AX 8-1761.

AFGHAN HOUND PUPPIES for pet, show, or hunting; from bloodlines that are world-famous. Crosby, 344-3098 after 6 p.m.

BOOKCASE HEADBOARD, Double dresser, \$75; table model radio-phono, \$20; 16" TV, \$30; foldaway bed, 3/4 innerspring, \$25. Reed, AL 5-0502.

TENT, umbrella type w/side room, 9x11', enclosed side porch, sewn in floor, aluminumized top, \$30. Clenney, UN 4-8394.

EASTER PUPPIES, AKC Dachshunds, 6 weeks old Good Friday, excellent bloodline and markings. Summers, AX 8-1001.

TRAILER, two-wheel, 12', sleeps two, best offer over \$300. Carbin, AX 8-0318.

TWIN OR BUNK BEDS, mattresses, 4-drawer chest, ladder, maple finish, 1-yr.-old, \$90. Taylor, DI 4-8176 after 5 p.m.

TWO END TABLES, one round coffee table, blond, formica tops, \$7.50 each; 3-drawer metal chest, maple finish, \$8. Hayes, AX 8-1482.

'53 OLDSMOBILE 88 4-dr., R&H, new battery, \$150. Meyer, 298-4825.

PALOMINO GELDING, double registered, 3 yrs. old, reins nice for riding and shows, had some training. Haley, DI 4-3919.

SHOTGUN, PUMP, Winchester Model 12, 20 gauge, modified choke, w/case, \$65. Newcomer, 255-9728.

STROLLER, Taylor Tot, metal type, blue and white, \$5. Still, 298-3005.

'56 CHEV Nomad wagon, V-8, PG, R&H, premium ww tires, seat belts. James, AX 8-0709.

KITTENS—TO GIVE AWAY, "Snows" latest and finest, 2 black and white, 2 all black, and 2 tiger stripe, long-haired, 7 weeks old. Edgar, AL 5-9070.

SUMMER MATERNITY clothes, size 11-12; movie camera, Revere, 8 mm, like new. Vasquez, AL 6-3809 evenings.

WHEELCHAIR, like new, best model lightweight folding type w/leg rest. Duns-worth, 243-4364.

REGISTERED Fox Terrier puppies, 6 weeks old, 1 female, 7 mos. old. Burt, DI 4-8654 after 5 p.m.

SELL OR TRADE for guns or camping equipment: capacitor substitution box, \$10; resistance decade box, \$70. Scranton, AX 9-4902.

'52 STUDEBAKER Champion, R&H, \$150. Callahan, AX 9-3273.

ADMIRAL portable 4-speed player-radio combination w/stand and record holder on rollers, and 45 RPM spindle. Pass, AL 6-9663.

SELL OR TRADE: '57 Ford Victoria hard-top, T-bird motor, PB, PS, auto. trans., seat belts, R&H; want house trailer 20' or less. Moore, AM 8-4135.

'47 FORD club coupe, metallic blue. Letourneau, 298-1026.

PUPPIES, 6 weeks old, mother—registered Beagle, father—black Terrier, females \$5, males \$10. Stevens, AX 9-6086.

14' BOAT, trailer, 18 HP Evinrude electric, steering, controls. Swinford, AL 5-9270.

SELL OR TRADE FOR 30-30: like new 410 cal. bolt action shot gun. Labrier, AX 9-2612.

'56 PLAZA PLYMOUTH, 6-cyl., 4-dr., OD, \$500 or best offer. Bouchard, 1617 Anderson SE, AL 6-1495.

'55 FORD CONV., auto. transmission, minor body damage, \$225 cash or trade for pickup of equal value. Hursh, AX 9-0284.

ROYAL PORTABLE TYPEWRITER, like new, \$35, original cast \$125. Browne, 256-4861.

STUDENT DESK, mahogany finish, side compartments and center drawer, \$20; large chest of drawers painted pink, \$10. Sherwin, AL 5-8866.

LOTS between Wyoming and Moon on Comanche, NE, ideal for investment or for residential building, priced under the market. Dodd, AX 9-6330.

KIRBY VACUUM, latest model, with attachments, used only a few times. Willis, AL 5-3860.

MAYTAG AUTOMATIC WASHER, \$60. Burger, 299-8626.

TWO LOTS off South Highway 10 just above Pine Flats park in the Skyland Area. Schmedeman, TR 7-1092 or AX 9-7879.

ROBERSON 3-bdr, family room, carpeting, drapes, a/c, built-in range, oven, close to schools, shopping, 4 1/4% GI loan. Hodges, AX 9-1124.

'56 ALLSTATE SCOOTER, new chain, some spare parts, \$60. Reed, 298-2852.

#### NEXT DEADLINE

FOR SHOPPING CENTER ADS  
Friday noon, Apr. 20

COUCH AND CHAIR, couch needs recovering, \$20 for both. Frasier, AX 9-6933.

BLIZZARD portable evaporative air cooler, two motors for cooling or air circulation, 2000 FPM, metal cabinet w/stand, like new, \$25. Hachigian, AX 8-1414.

COLEMAN CAMP STOVE, 2-burner, \$5; 17" Motorola TV, \$30; Dormeyer deep fryer, \$10. Bowden, AM 8-2866 after 5.

ASHCRAFT original owner, 3-bdr, den, fireplace, h/w floors, carpeting, drapes, cooler, double garage, built-ins. Carlson, AM 8-3693.

'50 CADILLAC, will sacrifice for \$250. Arbogast, AX 8-4721.

SPRING AND SUMMER maternity clothes, size 10. Mehl, 1604 Bayita Lane NW, DI 4-9103.

JENSEN 15" coax speaker, model K310A in Carlson enclosure, \$25. Sayers, AX 9-1833.

'58 PLYMOUTH Savoy, V-8, 4-dr., sedan, push-button drive, factory drive, factory air, R&H, wsw's, low mileage, \$785. Beller, 268-2758.

42x30" DRAWING BOARD, w/Mayline parallel rule, linoleum cover, formica edge for about half price on rule alone, \$10. Baxter, 1610 Bayita Lane NW, DI 4-7601.

2-PIECE LIVING ROOM SUITE, green frieze, \$25; grey floral tapestry modern couch, \$10; 21" console TV, as is, \$50. Yarbrough, AL 5-4087.

3-BDR, den, 1 1/2 bath, Mossman, carpeting, a/c, fireplace, \$17,600, no down GI, \$800 down FHA. Shepherd, AL 6-2059.

'47 UNIVERSAL JEEP, 4-wheel drive, new tires, tow bar, chain, will accept any offer over \$300. Whatley, 215 DeSoto, Belen.

3-BDR house, Princess Jeanne, by owner, built-ins, disposal, carpet, patio, garage, walled, landscaped, near base, schools, Los Altos. Starkovich, AX 9-5445.

PLAYPEN and pad, \$7. Brown, AX 9-3189.

'53 PLYMOUTH, 2-dr., R&H, new tires and battery; 1960 portable TV, 17"; Singer sewing machine; portable air conditioner. Montano, DI 4-3797.

CHROMED COLT 41 Lightning w/belt, holster, ammunition, \$40; Admiral TV, \$40; swing set, \$10; large slide, \$10. Woodall, 298-4658 after 5.

BUNK BEDS and mattresses, maple finish. Sargent, AX 9-0427.

1 SET OF DRUMS, includes: 26" bass, mounted type tom-toms, and 14" snare, Black Pearl, \$135, terms. Whitlow, DI 4-1991.

3-BDR HOME, 2 baths, dining room, kitchen w/breakfast area, pitched roof, h/w floors, walled back yard, double garage, near Winrock. Sieger, AL 6-1158.

12' YELLOW JACKET BOAT w/trailer and 25 HP Elgin motor, \$495. Skinder, 298-3224.

'56 MERCURY, R&H, OD, will take older car on trade. Wittwer, AX 9-0311 after 5 p.m.

BLOND WOOD CONSOLE TV cabinet, large enough for a 24" TV set, \$5. Teisher, AX 9-6987.

TRAILER, 1-wheel Sears metal, extra wheel and tire, fitted custom tarp cover, brake and taillight, custom permanent mount front folding supports, \$45. Westman, AL 5-6048.

LELAND LIGHT PLANT, 2.5 KW, 115 volt, new gasoline motor, \$195. Brockway, 243-1019.

'50 CHEVROLET panel truck, R&H, \$200. Keller, AL 5-0435.

'53 JEEP station wagon, maroon, 4-wheel drive, 45,000 miles, needs engine, \$250; winch, \$75; additional or separate, \$350 new. Burnett, 298-4291 after 4:30.

LUGGAGE CARRIER, portable, \$15; bowling ball and bag, Brunswick, \$15. Taylor, AX 9-2269.

MOSSMAN, 4-bdr, den, 1 1/2 bath, steel fall-out shelter, other features. Delnick, AM 8-2530.

KENMORE 36" gas range, clock and timer, griddle top, glass oven door, \$35. Abrams, DI 4-8252.

LABRADOR RETRIEVER, 2 years old, papers, nice pet. Sumlin, AX 9-6137.

AUTOMATIC WASHER-DRYER, Bendix Duomatic, needs cleaning and minor repairs before re-installation, \$35. Austin, AL 5-2557.

CASEMENT WINDOWS, steel, glazed, screens; style 3323, 9 light, \$12; style 1313, 3 light, opaque glass, \$6. Starzynski, AX 9-3489.

'60 CHEV 1/2-ton pickup, wide bed, long wheel base, 14,000 actual miles, 6-ply tires, \$1575. Burton, AX 9-3509, 9701 Haines NE.

AQUARIUMS, 10 and 15 gal. w/reflectors, heaters, filters, ornaments, and gravel; piston type pump; 5-gal. aquarium complete. King, 299-3778.

WEDDING DRESS, full length, size 10. Shelton, 298-3881.

VESPA SCOOTER just overhauled, buddy seat, roll bars, luggage rack, 3 new tires, spare oil and gas tank, windshield, \$150; Reo 4-cycle lawn mower, \$25. Cundiff, AL 6-4649.

'55 PLYMOUTH V-8 Belvedere, new transmission and tires. Benzing, AX 9-8601 after 5 and on weekends.

COLLECTOR'S ITEM, '58 Edsel hardtop, Ranger series, low mileage, like new, kept in garage, \$700. Norton, BU 2-3165.

'56 ALLSTATE motorscooter, windshield, 3-speed transmission, \$140. Huddle, AX 8-3471.

GE RANGE, 40" wide, \$110; wardrobe, sliding doors, cedar lined, gray exterior, \$30. Lilly, 298-2560.

'53 PLYMOUTH 4-dr., all extras. Pollett, 255-6828 after Saturday.

STUDIO COUCH, red tweed, converts into bed, \$40; wedding gown, size 9, w/veil and pearl crown, \$30. Jaramillo, AX 9-3441.

ZOYSIA GRASS SOD, approximately 2 square yards, \$6 per yard. Nelson, AL 5-2364.

BOY'S BEDROOM SUITE, twin bed w/mattress and boxspring, chest, desk, and night stand, southwestern style, \$75. Koetter, AM 8-1009.

FREE: half Springer Spaniel puppies. Westman, AL 5-6048.

'52 PONTIAC Hydromatic, 65,000 miles, rebuilt running gear, recent major tune-up, \$195. Floyd, AX 9-2419.

3-BDR PUEBLO STYLE, near bases, dishwasher, disposal, 220 outlets, washer rough-in, hw/floors, carpeted living room, hall. Rucker, AL 5-4395.

MAGIC CHEF gas range w/grill, \$50. Regan, AX 9-8877 after 5 p.m.

WESTINGHOUSE STOVE, \$45; portable sewing machine, \$25; 30 gal. water heater, \$10; Whirlpool washer, \$35. Gardner, DI 4-2547.

'59 MGA roadster model, R&H, wire wheels, white wall tires, 19,000 miles, \$1400. Weathers, CH 3-7432.

'56 HARLEY-DAVIDSON motorcycle, KH model, \$450 or trade for pick up. Gonzales, CH 2-5084.

'49 PLYMOUTH, 4-dr., \$100. Kraft, AX 9-1278 after 5 p.m.

SCREEN DOOR, 30x81, \$2; four-light exterior door, 31 1/2x80, \$4; Hollow-core interior door, 29 1/2x80, \$3; solid-core exterior door, 31x81, \$12; all w/hardware. Selph, AX 9-6833.

ROLLAWAY BED and mattress, full size, \$15; chest of drawers, \$5; pink formal, size 12, \$5. Young, AL 6-9158.

10-BOOK SET Junior books; Hi-Fi speaker; child's rocking horse. Smith, 242-6422.

3-BDR CHAPMAN, 1 1/2 bath, paneled den, fireplace, a/c, double garage, carpets, drapes, landscaped, low down, \$16,900 total. White, 9713 McKnight NE, AX 9-6411.

HALF ACRE mountain lot in Crestwood Manor addition, 7 miles S Hwy. 10, \$1000 cash. Sanchez, CH 2-4556 after 5 p.m.

ACRE LOT Elephant Butte Lake, borders Federal recreation area, \$600 down, balance terms. Wilcox, AX 9-5543 after 5 p.m.

2-BDR, double garage, stove, refrigerator, a/c, carpeted, by owner, 329 Alcazar NE, near fairground, \$500 down, \$10,500 total. Bauer, AL 5-7774 or AX 9-4688.

3-BDR, dining area, 220, carpet, a/c, wall, landscaped, workshop, near Sandia, by owner, under appraisal, \$11,500. Russell, 265-1356.

MUFFLERS, MATCHING PAIR, Fenton Super stock, 31" long including flanges, fits 2" tail pipe, \$10. Huebner, AL 6-0978 after 4:30 p.m.

#### WANTED

ADOBE OR DOUGH MIXER, suitable for mixing adobe; Burro, suitable for children to ride. West, BU 2-3460.

RIDE for woman to and from 6500 Acoma SE and Bldg. 836. Langston, AL 5-0075.

TWO OR THREE DRIVERS to join car pool from South valley, Highway 47, Tome, Valencia, Peralta, Bosque Farms. Clenney, UN 4-8394; O'Connor, UN 4-3623.

#### FOR RENT

MOSSMAN HOME, 3-bdr unfurnished, carpeting, dishwasher, a/c, landscaped, walled yard, covered patio, near schools. Grab, AX 9-0015.

3-BDR, 2 bath house, water and garbage paid, \$100/mo., available May 1, 4805 Palo Duro, NE. Selph, AX 9-6833 days 877-3651 evenings.

#### LOST AND FOUND

LOST: Rust-colored suede jacket with knit cuffs and collar, left on parked car of La Madera ski area several weekends ago. Reward. Sherwin, AL 5-8866.

## AEC Lets Construction Contract For Livermore Area 8 Facilities

The Atomic Energy Commission has awarded a \$49,312 contract to Long's Construction, Oakley, Calif., for the construction of two facilities for handling conventional explosives at Livermore Laboratory.

The construction, to be completed in mid-July, will be located in Area 8, south of the main laboratory area.

The project consists of a two-room explosive assembly building to be operated by Environmental Test Division 8121 and an explosives shipping and receiving structure to be operated by Safety Engineering Section 8242-1. Both facilities will be covered with earth and protected by reinforced concrete barrier walls.

Conventional explosive charges, weighing no more than one pound, will be stored and assembled in these buildings for testing in the Laboratory's explosive firing chambers located nearby.

The new facilities will be equipped with conductive flooring, explosion-proof lighting fixtures, and other safety features. A connecting road to explosive storage magazines is also included in the contract.

Specifications for the new facilities were established by the Natural Environment Section and design criteria were drawn up by the Planning Section of Plant Engineering Division 8221 in coordination with Safety Engineering Section 8242-1. J. G. Harter (8221-1) was Plant Engineering project engineer.

## Tennis Association To Establish Ladder For Singles, Doubles

Sandia Laboratory Tennis Association has announced that tennis singles and doubles, to be used in establishing a rankings ladder, will be played on the Beverly Courts, Louisiana at Indian School Road. Play will be at 7:30 a.m., Apr. 28-29 (singles) and May 5-6 (doubles).

Applications are available from O. J. Foster (3122-2), Services Representative, Bldg. 610, ext. 29-157. Applications for singles play should be returned to Mr. Foster by Apr. 25, and for doubles play by May 2.

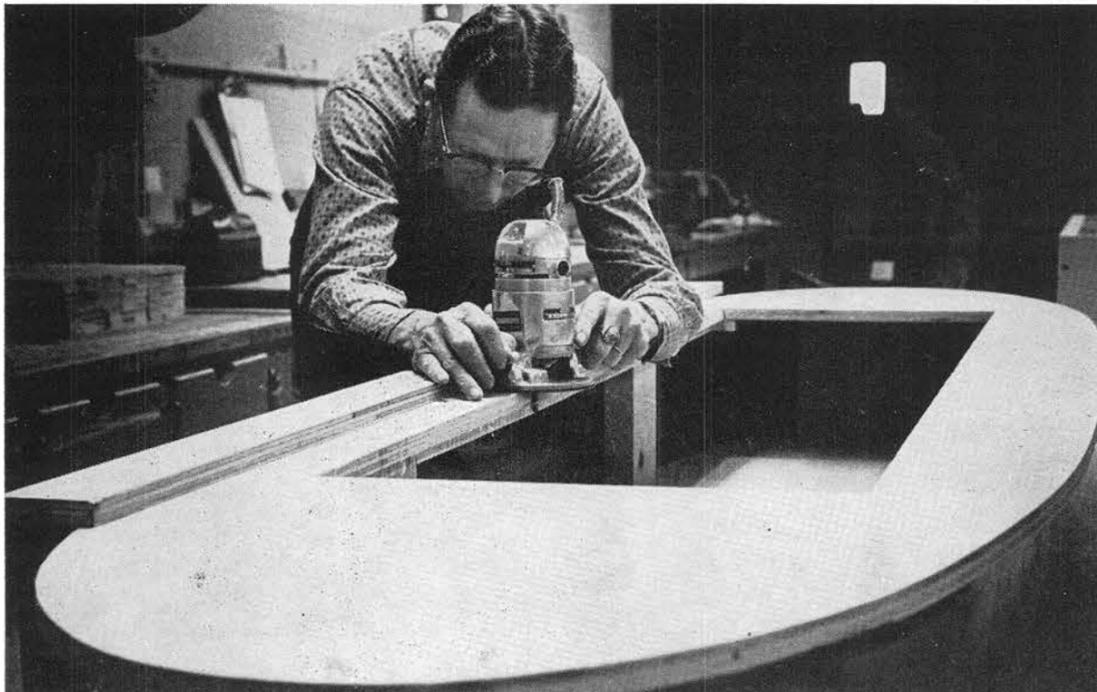
Tennis Association representatives, their organizations and telephone extensions include Ed Hamilton (AEC), 51207; Don Johnson (1100), 42250; Bob Neeld (1300), 49154; Hup Wallis (2300), 34159; Dick Kavet (2500), 26138; Charlie Chavez (2600), 49173; Herb Pitts (3100), 20132; Mill Wagoner (3400), 52253; Lou Sisneros (4100), 52269; Stan Urevitch (4200), 26254; Bill Otero (4600), 33236; and John McKiernan (7100), 23238.

## W. A. McCormick To Retire From Sandia April 30

W. A. McCormick, a storekeeper in Warehouse Services Division 4612, will retire Apr. 30 after nine years at Sandia.

Mr. McCormick says he's "not excited" about his future leisure time — he already has plenty of plans. He and his wife will visit their hometown in Kansas where Mrs. McCormick's parents still live. Afterwards they will return to Albuquerque and Mr. McCormick will "fix up things" and put in a garden at their home at 309 Placitas Rd. NW.

Just visiting with their children and grandchildren will account for a bit of time since their children live in Colorado Springs, Chicago, Hawaii, and here.



CABINET WORK is a finely-developed skill of Orville T. Schurr. Good tools, know how, care and caution all help to produce fine products. Section headquarters and cabinet shop are located in Bldg. 887.

## Sandia Lab Carpentry Section Tackles Variety of Jobs --- Handle All Safely

"We never know from day to day what the jobs are going to be," says J. Hardin Simmons, supervisor of Carpentry Section 4513-2. "But whatever they are, we can handle them."

Hardin heads a crew of 19 skilled carpenters who fill Plant Maintenance and Plant Engineering requests for carpentry jobs throughout the Laboratory. Jobs range from installation of shelves to modification in buildings.

Last week carpenters of the section were modifying a structural wall in Bldg. 838, moving partitions in Bldg. 802, and constructing support platforms for Bldg. 818 air conditioning.

Other carpenters were working on a temporary security screen in Bldg. 892 and installing ceiling tile and a darkroom in Bldg. 806, plus making a host of minor repair jobs such as fixing stuck doors or windows and repairing office chairs.

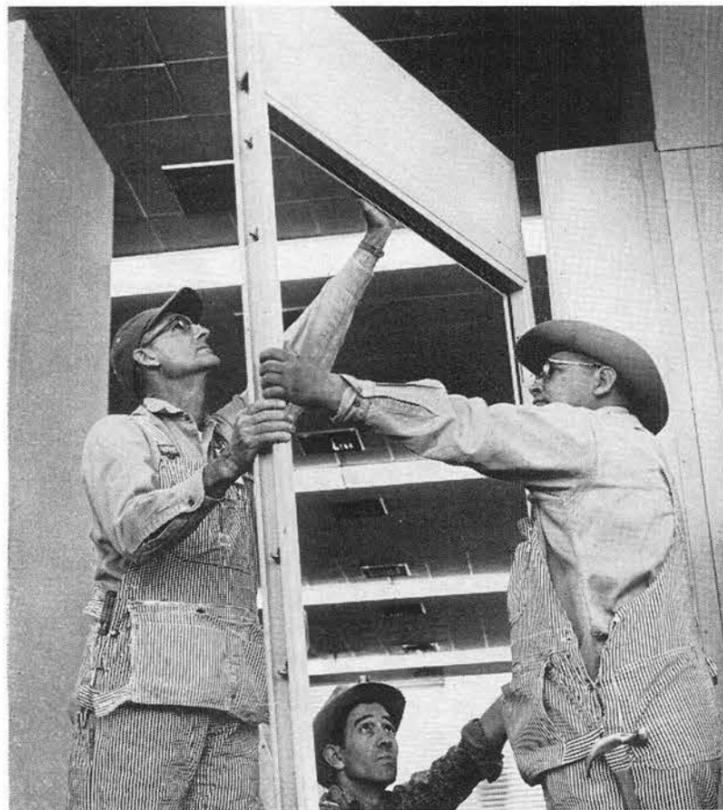
In the Bldg. 887 carpentry shop, section headquarters, cabinet makers were turning out cabinets and precision-instrument cases.

On every job, the carpenters aim to please. "We first talk it over with the Plant Engineering project engineer and then consult with the requesting organization," Hardin says. "We are a service

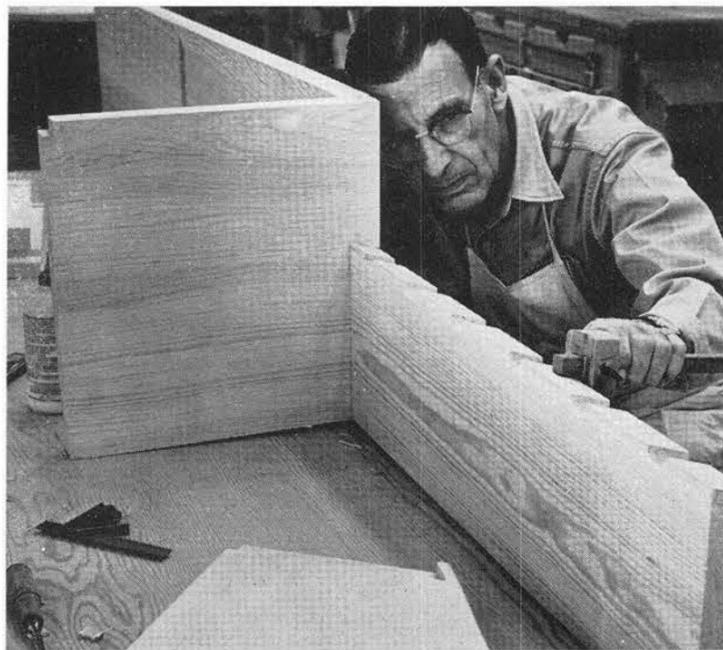
organization. We want satisfied customers."

Contributing to the carpenters' skill is their combined average of 20 years experience in the trade. "Very few jobs come along that at least one of us hasn't tackled before," Hardin says. "Although a few of the support jobs in various laboratories and Area III have been highly specialized with rigid requirements."

In addition to the pride in their work, the men are also proud of their safety record. The section has accumulated a record of 1293 days worked without a disabling injury. Their last accident was on Sept. 25, 1958.



MOVING PARTITIONS in the AEC office area in Bldg. 802 last week was a typical job of the Carpentry Section. From left are J. Rex Hollon, Reynel Garcia, and Santos Quintana.



PRECISION INSTRUMENT storage cabinet is being built by Rosendo L. Lesperance, cabinetmaker. He has 45 years' experience.

## Jack Meister Retires April 30; Plans to Do Some Traveling

C. R. "Jack" Meister of Inspection Section 4542-1, Plant Engineering Department, will retire Apr. 30. He came to Sandia 10 years ago.

Mr. and Mrs. Meister plan to remain in Albuquerque at 520 Sandia View Rd. NW. They have two children.

In May the Meisters will hitch their trailer to their car and drive to Seattle to attend the World's Fair, then go on to Canada. There will be time later for deer hunting and fishing in Mexico and Canada.

Mr. Meister enlisted in the Marine Corps for pilot training while a senior at the University of Missouri in 1918. He was a pilot in the Air Corps during World War II.



## Sandia's Safety Record

**Sandia Laboratory HAS WORKED 1,820,000 MAN HOURS OR 48 DAYS WITHOUT A DISABLING INJURY**

**Livermore Laboratory HAS WORKED 800,000 MAN HOURS OR 139 DAYS WITHOUT A DISABLING INJURY**



IN FAIRLY HAZARDOUS trade of carpentry, safety is a continuous concern. Sandia's Carpentry Section 4513-2 has worked 1,293 days without a lost-time injury. Above, supervisor J. Hardin Simmons, far right, conducts weekly safety meeting. Last lost time accident in Section occurred Sept. 25, 1958.