

equipment for science teaching. To date, applications for loans from schools in this category total \$2,431,000. Private schools which are operated for profit are not eligible for loans under the act.

Exotic Language Programs

Under other provisions of the act, the Office of Education has completed arrangements to open 19 centers for instruction in languages rarely taught in this country. Persian, Singhalese, and Swahili are among the languages to be offered next fall at some of the new centers. The instruction offered at the various centers will not be limited to languages. Courses on economic conditions and cultures of the countries or areas where these languages are spoken will also be offered.

The centers will be located at various universities throughout the country and operated by the universities. Some of the centers will offer instruction in only one language; the center at the University of Kansas, for example, will offer only Chinese. The two centers at Harvard will offer seven languages—Chinese, Korean, Tibetan, Arabic, Persian, Turkish, and modern Hebrew. The center at the University of Chicago will offer five. Other languages offered by one or more of the 19 centers for the coming academic year include Russian, Hindustani, Japanese, Portuguese, Bengali, Burmese, Finnish, Hungarian, Polish, Turkish, Vietnamese, and Indonesian. Among the most rarely taught languages are Gujarati and Marathi (spoken in South Asia), Yoruba (spoken in Africa), 25 Uralic-Altaic languages (spoken throughout Asia and Eastern Europe), Khalkha (spoken in Outer Mongolia), Thai, and Telugu (spoken in India).

Computers and Automatic Stations To Speed Weather Forecasting

Under a contract recently awarded, work will start on the development of a new weather forecasting system that will employ computers and automatic observation stations. The new system, which is being sponsored by the Air Force, the Federal Aviation Agency, and the Weather Bureau, is expected to reduce by two-thirds the interval between observation and forecast. Such a reduction, if achieved, would result in much more accurate predictions of rapidly changing weather conditions.

The saving in time will be accom-

plished primarily by the substitution of automatic devices for human observers, telegraph operators, and forecasters. Data on pressure, temperature, humidity, and wind direction, which are now collected largely by human observers, will be gathered by automatic weather stations. These data will be transmitted by telegraph printers operating at 600 words a minute—about ten times the speed of the human operators in the present network. The system will be controlled by a large electronic computer, which will signal each station when to report. The computer, replacing the human forecaster, will process the data and transmit its prediction to automatic display devices in airport control towers, pilot briefing rooms, and local Weather Bureau offices.

This system, which will be virtually automatic, is expected to reduce the interval between observation and forecast to 2 hours or less. With the present network, this interval is sometimes as long as 6 hours. It is expected that use of the automatic system will eventually reduce the interval to 20 minutes.

Test Network Set for 1963

A test network, employing the new system, is scheduled to go into operation in the northeastern United States by 1963. Ten stations, eight of them major civilian or military airports, will be linked together in the test net. The stations are: L. G. Hanscom Field at Bedford, Mass.; Westover Air Force Base at Chicopee, Mass.; McGuire Air Force Base at Wrightstown, N.J.; New York International Airport (Idlewild); Suffolk County Air Force Base at Westhampton, N.Y.; the Atlantic City Weather Bureau; Washington National Airport; Oceana Naval Air Station at Norfolk, Va.; Teterboro (N.J.) Airport; and the National Meteorological Center in Suitland, Md.

Salt Mine Sought for Nonnuclear Detection Shot

The Atomic Energy Commission is negotiating with the Carey Salt Company for use of the company's mine near Winnfield, La., for detonation of several nonnuclear, high-explosive charges. The purpose of the firings is to check the seismic records of such explosions. It is expected that there will be about ten detonations of charges ranging up to 5 tons in size.

As was pointed out in the summary of the "Findings of the Panel on Seismic Improvement," which was released on 12 June, it is possible that seismic signals from underground explosions could be reduced through decoupling techniques by a factor of 10 or more. (Theoretically, the signals might be reduced by a much greater factor than this.) In view of its importance to the current Geneva discussions, it is hoped that the results of the high-explosive tests in the Carey salt mine will be of help in evaluating this theory.

Instruments will be placed at various locations within the mine and on the surface relatively close to the mine. The U.S. Coast and Geodetic Survey will assist the Atomic Energy Commission in placing and operating the instruments, and in analyzing the signals received. It is expected that the firings will commence late this summer. Preparation for, and conduct of, the work will be the responsibility of the test manager of the Atomic Energy Commission's Albuquerque Operations Office; the project will be under the technical direction of the Lawrence Radiation Laboratory, operated for the Atomic Energy Commission by the University of California.

AAAS To Hold International Oceanographic Congress

The AAAS will hold another special meeting this year, the first International Oceanographic Congress, according to Dael Wolfle, executive officer. UNESCO and the Special Committee on Oceanic Research of the International Council of Scientific Unions are cosponsoring the meeting, which will be held at the United Nations headquarters in New York from 30 August through 11 September. Participants are expected from all parts of the world. Oceanographic vessels from France, the U.S.S.R., and the United States will be in New York harbor and may be visited by those attending the congress.

The AAAS committee, consisting of Mary Sears (chairman), Gustaf Arrhenius, John Cushing, Fritz Koczy, Gordon G. Lill, George S. Myers, Roger Revelle, Henry M. Stommel, and Lionel A. Walford, has been at work for over a year on the arrangements and has planned an excellent and very full program. This will be the first full-fledged oceanographic congress ever to be held and will bring together both biological and physical scientists interested in prob-

lems of oceanographic research. The congress will open with a reception on the evening of 30 August, and the first scientific session will be held the morning of 31 August. The meeting is open to anyone who wishes to attend. The registration fee of \$10 covers program materials, a book of abstracts of the technical papers, and admission to several of the social events.

A preliminary announcement of the AAAS International Oceanographic Congress was published in *Science* 27 March. Further details on the congress and final revisions of the program will be printed in *News of Science* in the issue of 14 August.

Forest Reserve Program

Since 1947 the Society of American Foresters has been endeavoring to locate and permanently protect representative units of virgin or old-growth forest for purposes of future research in silviculture, forest management, and related ecological fields. Such forest units, called "natural areas," must be at least 20 acres in size; no upper size limit has been set, but for purposes of the program areas of more than 1000 acres would not be needed. A single type of forest growth within each area must cover at least 10 acres. Timber-cutting and grazing are prohibited on natural areas, and use of these forests for recreational purposes by the general public is discouraged.

The Society of American Foresters has recognized 156 forest-cover types for the United States as a whole, 106 in the East and 50 in the West. To date the society has been instrumental in protecting 49 cover types in the East and 36 in the West. Fifty-four percent of the 156 cover types are presently found within the approved natural areas. However, only 46 percent of the eastern cover types are protected, and the percentage is still lower for the southeastern region.

To assist the society in this program, Resources for the Future, Inc., has granted funds which will make possible a field investigation in the states of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, and Tennessee. The society will appreciate the assistance of anyone who knows of forests in those states which warrant consideration as natural areas. Anyone having such information should communicate with John F. Shanklin, Chairman, Committee on Natural Areas, Society of American Foresters, Mills

Building, 17th and Pennsylvania Ave., NW, Washington 6, D.C. If possible, the information should include: (i) the names of both the state and county, with specific data on actual location within the county; (ii) the area (in acres) of each type of forest growth; and (iii) the name and address of the owner.

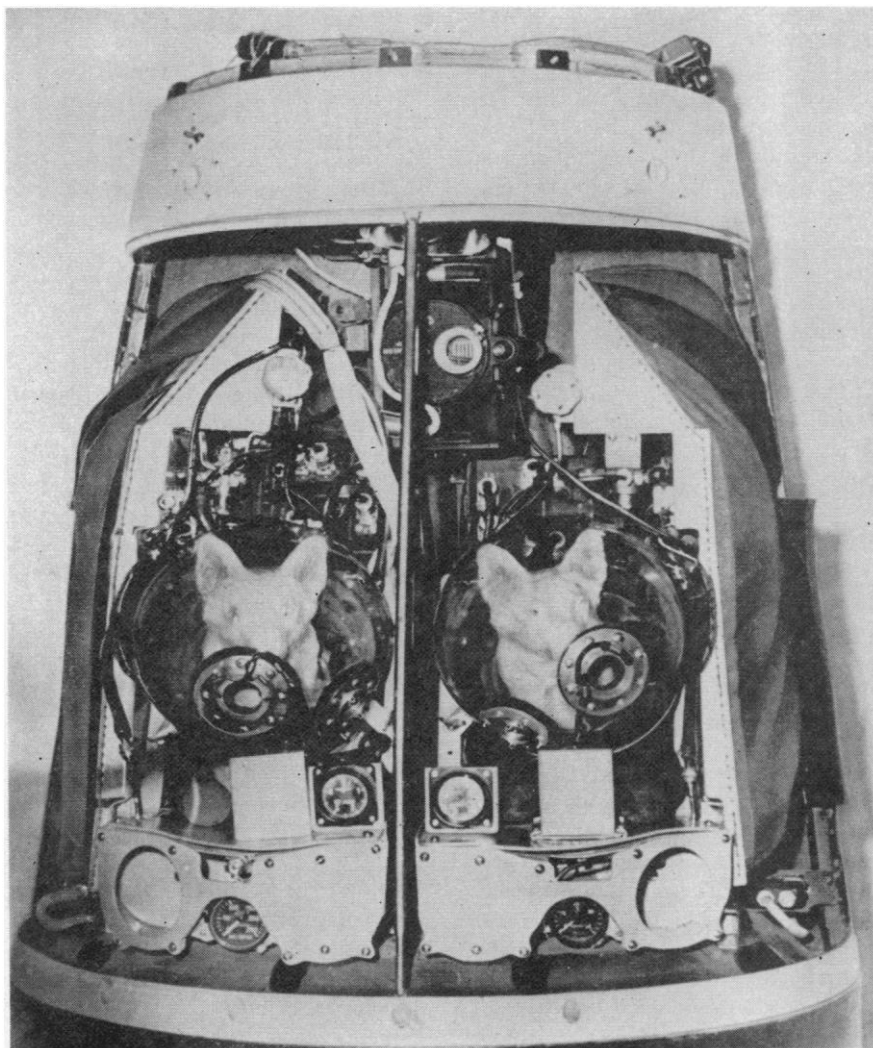
Rabbit and Two Dogs Recovered from Space

The Soviet Union sent two dogs and a rabbit into space on 2 July and successfully recovered them. The payload of more than 4400 pounds (this includes the weight of the animals) was said to be the heaviest yet put into space. No altitude for the successful shot was given in the Soviet announcement.

Tass, the official Soviet press agency, said that the instruments aboard the

missile had sent back information on the animals' reaction to weightlessness as well as information on the ultraviolet part of the solar spectrum, the structure of the ionosphere, and the direction and speed of air streams at various altitudes.

The condition of the animals was reported to have been good on their return. One of the dogs, whose name means "courageous" or "daring," had been used in two earlier flights, according to the announcement. When the launching and recovery were revealed, 4 days after the event, Soviet commentators cited the significance of the flight for eventual human travel in space. "This has proved we can bring animals back alive," one commentator said. "It means much in the preparation for space flights by human beings." None of the radio and press announcements mentioned the successful launching and recovery in this country of the monkeys Able and Baker.



Models were used in this Soviet rocket chamber designed to carry a pair of dogs aloft for short space flights. The chamber, enclosed in a parachute pack, was exhibited at an industrial achievement fair in Moscow last February. A similar chamber was presumably used 2 July when two dogs and a rabbit were sent into space and successfully recovered.