Other Organizational Developments

The weapons systems evaluation group, responsible to the Assistant Secretary of Defense (Research and Development), was established in 1948. It provides the assistant secretary and the joint chiefs of staff with analyses and evaluations of the comparative effectiveness and costs of present and future weapon systems, and of their influence upon strategy, tactics, and organization. The group, which must be intimately aware of data gathered by the intelligence agencies and of strategic plans, as well as the latest technical developments, has the function of bringing scientific potentialities into a productive relationship with operational needs. In 1955, in response to a recommendation of the second Hoover Commission, the department transferred this activity to contract operation.

Also reporting to the Assistant Secretary of Defense (Research and Development) and to each chief of staff is the Armed Forces Special Weapons Project, established in 1946. This group provides technical, logistic, and training support for atomic weapons to the military departments, and maintains liaison between the Atomic Energy Commission and the Armed Forces in research and development on atomic weapons in areas not covered by the military liaison committee.

Contractor-Operated Research Centers

Each of the three military departments has made extensive use, since 1947, of an organizational device first employed by the Office of Scientific Research and Development during World War II, the contractor-operated research center, usually in facilities which the government owns.

While these centers vary widely in the nature of their management control and the scope of their mission, they all have one thing in common—a primary contractual relationship with one or more of the military departments. This new and steadily growing institutional arrangement has been particularly well suited to research in broad problem areas associated with weapons systems development. Each military department has also used such centers for the conduct of operations research.

For example, in 1949 the Army established the Operations Research Office, managed by the Johns Hopkins University; the Navy utilized the OSRD-born Operations Evaluation Group, operated by contract with the Massachusetts Institute of Technology; and the Air Force activity encouraged and financed the creation of the RAND Corporation, an independent research group with a broad range of research interests.

By 1955 there were roughly two dozen such research centers engaged almost entirely on work for the three military departments. The nature of the contractual arrangements between the military departments and the universities, other nonprofit organizations, or commercial concerns operating the centers, enables the directors of the centers to carry out their programs free from many of the administrative problems posed for scientific work by governmental procedure and organization.

National Science Foundation

The National Science Foundation was established by Act of Congress in 1950. This culminated a movement which began in 1945 when extensive congressional hearings revealed that an overwhelming majority of the nation's scientists, educators, and business leaders favored the creation of such an agency as had been proposed in Vannevar Bush's report, "Science—The Endless Frontier."

Under the terms of the act of 1950, the foundation's authority is vested in the National Science Board and the director of the foundation. The board consists of 24 members appointed by the President with the advice and consent of the Senate. The director is also named by the President with the advice and consent of the Senate.

The foundation's responsibilities, as set forth in the act, were clarified and elaborated by Executive Order 10521, issued in 1954. Of major importance is the foundation's support of basic research in the sciences through grants to investigators, usually in universities. The foundation has a fellowship program and other programs designed to aid in the training of scientists and in improving the quality of science teaching. It is also concerned with expanding the dissemination of scientific information. It is charged with responsibility for developing and encouraging the pursuit of a national policy for the promotion of basic research and education in the sciences and with appraising the impact of research on industrial development and on the general welfare.

To meet these responsibilities the foundation maintains a staff in Washington which is organized into six principal divisions and offices.

National Aeronautics and Space Administration

One major change in the organization of the Federal Government for scientific activities that has occurred since the publication of the National Science Foundation's study which appears in part above is the absorption of the National Advisory Committee for Aeronautics by the recently created National Aeronautics and Space Administration. The new agency, which will eventually control many of the scientific activities now under the direction of the Department of Defense, has responsibility for all space programs which are not primarily associated with national defense. The area of jurisdiction of this agency is currently being defined. Further information concerning the NASA can be found in *Science* [**128**, 582 (12 Sept. 1958); **128**, 826 (10 Oct. 1958); **128**, 889 (17 Oct. 1958); **128**, 994 (24 Oct. 1958)].

U.S.–Euratom Agreement for Cooperation Signed

An agreement between the United States and the six-nation European Atomic Energy Community (Euratom) was signed on 8 November 1958 in Brussels. The agreement for cooperation in the civil uses of atomic energy has as its major objective the bringing into operation in the Community in the next five to seven years of approximately 1 million electrical kilowatts of nuclear power capacity, using reactor types developed in the United States.

It is expected that the provisions for wide dissemination of information under the program will provide industrial organizations in the Community and the United States with valuable engineering experience, and technological and economic data concerning the operation of nuclear power plants in Europe under conditions that will be nearly competitive with conventionally fueled plants.

The agreement, expected to come into force after Congress convenes in January 1959, contains the major objectives of the United States and Euratom on the joint nuclear power program, whose capital cost, exclusive of fuel, is expected to be about $350 million. These provisions include:

1. Financial guarantees by the United States of up to $90 million for a 10-year operating period with respect to the cost and integrity of the fuel elements required in the reactors;
2. Long-term assurance of an adequate nuclear fuel supply at prices equivalent to those offered to domestic U.S. industries;
3. Guarantee for a 10-year period of a market for the plutonium recovered from the power reactors in the program;
4. Long-term line of credits of up to $135,000,000 to cover a portion of the capital costs of the nuclear power plants; and
5. A long-term assurance by the United States chemical reprocessing services will be available under terms comparable to those then available to U.S. industry.

An integral part of the program is a

joint 10-year research and development project. During the first 5 years the Community and the United States will each contribute up to $50 million to this program. Before the expiration of the first 5 years the participants will determine the financial requirements for the remaining 5 years and will undertake to procure the necessary funds for the program.

The nations which make up the Community are Belgium, France, the Federal Republic of Germany, Italy, Luxembourg, and the Netherlands. The six member countries have a total population of 160 million.

The agreement for cooperation is the product of close and continued negotiations between the United States and Euratom, beginning shortly after the establishment of Euratom on 1 January 1958. The first major step, outlining the scope of the proposed joint undertaking, was accomplished through the signing of a Memorandum of Understanding by representatives of Euratom and the United States in June 1958.

In conformance with U.S. Law, the United States and Euratom then entered into a general international agreement designed to permit cooperation between the United States and Euratom. *Science* 128, 75 (11 July 1958). This preliminary international agreement and the legislative basis for initial U.S. participation in the joint program as contained in the Euratom Cooperation Act of 1958 were approved by Congress in August 1958.

Tuberculosis Infection

The American Trudeau Society reports that there is no drop in the tuberculosis infection rate among young school children, despite a decided drop in death rate in the 10-year period 1947–57. A study, made in Kansas City, Mo., also revealed that in examining grown people in contact with kindergarten children reacting to the tuberculin skin test, active tuberculosis was found at a rate 12 times as high as is found in x-ray surveys of the general population, and that there is a relationship between the size of the reaction and the presence of active tuberculosis among the adult contacts. During the test period, 35,995 kindergarten children were given the tuberculin test, which reveals tuberculosis infection but not necessarily active disease, and the histoplasmin test for histoplasmosis, a fungus disease endemic in the area. Nonreactors, during a seven-year period, were retested in the first grade.

The study was sponsored by the Heart of America Tuberculosis Association and the U.S. Public Health Service. The results were reported in the November issue of *The American Review of Tuberculosis and Pulmonary Diseases,* in a paper by Lawrence E. Wood of the University of Kansas School of Medicine, Michael L. Furcolow, chief, Kansas City Field Station, PHS Communicable Disease Center, and Myron J. Willis of the Communicable Disease Center, Atlanta, Ga.

Control of Outer Space

A draft resolution on the control of outer space was submitted to the United Nations General Assembly on 13 November by 20 countries, including the United States. Henry Cabot Lodge of the United States introduced the resolution. When discussing it, he commented:

"We can use this new dimension to destroy ourselves through the extension of national rivalries into outer space, or we can use this new development as a vehicle for international collaboration and harmony." Lodge observed that the resolution did not deal with missiles, then added: "Candor compels us to admit that agreement on the disarmament aspects of outer space lies in the future. We cannot await a comprehensive disarmament agreement."

The text of the resolution follows:

"The General Assembly,

"Recognizing the common interest of mankind in outer space and that it is the common aim that it should be used for peaceful purposes only,

"Bearing in mind the provision of Article 2, Paragraph 1, of the Charter, which states that 'the organization is based on the principle of the sovereign equality of all its members,'

"Wishing to avoid the extension of present national rivalries into this new field,

"Desiring to promote energetically the fullest exploration and exploitation of outer space for the benefit of mankind,

"Conscious that recent developments in respect of outer space have added a new dimension to man's existence and opened new possibilities for the increase of his knowledge and the improvement of his life,

"Noting the success of the scientific cooperative program of the International Geophysical Year in the exploration of outer space and the decision to continue and expand this type of cooperation,

"Believing that the development of programs of international and scientific cooperation in the peaceful uses of outer space should be vigorously pursued,

"Believing that progress in this field will materially help to achieve the aim that outer space should be used for peaceful purposes only,

"Desiring to obtain the fullest information on the many problems relating to the peaceful uses of outer space before recommending specific programs of international cooperation in this field,

"1. Establishes an ad hoc committee on the peaceful uses of outer space consisting of the representatives of . . . and requests it to report to the Fourteenth General Assembly on the following:

"(a) The activities and resources of the United Nations, its specialized agencies, and of other international bodies relating to the peaceful uses of outer space;

"(b) The area of international cooperation and programs in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices to the benefit of states irrespective of the state of their economic or scientific development;

"(c) The future United Nations organizational arrangements to facilitate international cooperation in this field;

"(d) The nature of legal problems which may arise in the carrying out of programs to explore outer space;

"2. Requests of the Secretary-General to render appropriate assistance to the above-named committee and to recommend any other steps that might be taken within the existing United Nations framework to encourage the fullest international cooperation for the peaceful uses of outer space."

News Briefs

On 18 November the new Laboratory of Microbiology of the Technological University at Delft, Netherlands, was officially opened. During the dedication ceremony, a bust of the former director, the late professor A. J. Kluyver, was unveiled and presented to the university on behalf of former pupils and personnel of the laboratory.

* * *

The United Nations has announced that the prepublication period for the Proceedings of the Second U.N. International Conference on the Peaceful Uses of Atomic Energy, during which complete sets may be ordered at a special price, has been extended to 31 January 1959. The action was taken to facilitate the budgetary arrangements of institutions unable to purchase the complete set of volumes from their 1958 budgets.

* * *

A new technique for calibrating airborne compasses by "rotating the world" around a stationary aircraft or guided missile has been announced by the Air Research and Development Command and the Sperry Gyroscope Company, Great Neck, N.Y. Developed by Sperry in cooperation with ARDC's Wright Air