

NBS activities include fundamental and applied research, development and engineering, testing, calibration and specifications, and many miscellaneous advisory scientific services. The NBS laboratories in Washington, D. C., are the scene of most of the Bureau's activities, but there has been a noticeable increase at the other three principal laboratories—the Institute for Numerical Analysis at UCLA, the Corona Laboratories for missile and ordnance research, also in Southern California, and the cryogenic engineering establishment at Boulder, Colorado.

As can be seen from the relative weighting of the Bureau's financial support, the bulk of its work is related to defense research and development programs. During the heat of the controversy over the merits of AD-X2, Secretary of Defense Charles E. Wilson issued an order specifying that all future Defense Department research projects be cleared by him. Although no mention of the Bureau of Standards was made in the order, it was widely interpreted as having been made at the request of the Secretary of Commerce as a restrictive measure against the Bureau. On April 30th, Lee A. DuBridge, a member of the Kelly Committee to evaluate the operations and functions of NBS, revealed that Mr. Wilson had been asked to withdraw the order, at least until the committee's work is completed.

Independent NBS Proposed

National Physical Sciences Laboratories

On May 6th a bill was introduced in the House of Representatives calling for the establishment in the executive branch of the Government of an independent agency to be known as the "National Physical Sciences Laboratories" and having all of the present functions and responsibilities of the National Bureau of Standards. The bill, H. R. 5043, was introduced by Representative DeWitt S. Hyde (R., Maryland) and has been referred to the House Committee on Interstate and Foreign Commerce.

Calling for the repeal of the original Act of 1901 establishing the Bureau, and for the transfer to the proposed Laboratories of the personnel, records, property, and unexpended funds of NBS, the bill asks for the creation of a governing board for the Laboratories that would be broadly representative of the nation's scientific interests. The board, it is proposed, would consist of eighteen members appointed by the President, and of the Director of the Laboratories as an *ex officio* member. Board members would serve without compensation and would include two members from each of the following: the Army, the Navy, the Air Force, and the Atomic Energy Commission. Other members would include the Chairman of the Research and Development Board of the Department of Defense, the Director of the National Science Foundation, the Director of the National Advisory Committee for Aeronautics, and seven "scientifically qualified individuals appointed from private life".

The Director of the proposed Laboratories would be

appointed by the President, by and with the advice and consent of the Senate, and would consult with the board in performing his duties. The board, in turn, would be called upon to visit the Laboratories at least once a year, and to report to the President upon the "efficiency of its scientific work and the condition of its equipment".

National Science Foundation

Graduate Fellowships in Science

Approximately twenty percent of the most recent NSF graduate fellowships in the natural sciences for 1953-54 have been awarded in physics, according to an announcement made by the Foundation early in April. A total of 556 fellows were selected from 3298 applications from all parts of the continental United States, Hawaii, and Puerto Rico. In addition, the Foundation named 1274 applicants to an "honorable mention" list, which is to be forwarded to the fellowship offices of graduate schools throughout the country. The list of fellowship winners includes 515 predoctoral and 41 postdoctoral candidates. 180 awards were made to first year graduate students, 166 to graduates in intermediate years, and 169 to terminal-year predoctoral students. Of the total, 175 had also been awarded NSF fellowships for the current academic year. They received awards for 1953-54 after competing on an equal basis with all new applicants for the fellowships.

The largest group, 129, was awarded in chemistry. In other fields the numbers of awards were: physics, 115; engineering, 63; mathematics, 56; zoology, 38; biochemistry, 35; geosciences, 26; botany, 19; microbiology, 18; biophysics, 14; medical sciences, 13; genetics, 11; psychology and anthropology, 10; and agriculture, 9.

Grants in Support of Research

NSF has also announced approval of this year's third group of grants in the physical and biological sciences and to support studies and conferences on science and scientific education. Sixty grants, amounting to \$469,550, are included in the new list, bringing the total for the 1953 fiscal year to more than \$1.8 million for 190 grants. Nearly three million dollars in grants have been awarded by the Foundation to institutions throughout the nation for support of basic scientific research and related matter since the beginning of the program in 1950. Only one of the most recent research grants was listed under the category of physics, the University of Pennsylvania being named to receive \$8800 for a three-year investigation into physical methods for the measurement of biological phenomena under B. Chance as principal scientist.

Other awards of interest include NSF support of the University of Minnesota's Summer Institute for College Teachers of Physics; the University of Michigan's Symposium on Astrophysics; a conference at the University of New Mexico on motions in the upper atmosphere; the Summer Mathematical Institute in Provi-

dence, Rhode Island, of the American Mathematical Society; a summer conference in collegiate mathematics at the University of Colorado; a conference on problems in astrometry at Northwestern University; and supplementary support for the Third Annual Conference on High-Energy Physics at the University of Rochester. Awards for research in astronomy and astrophysics were made to the Universities of Chicago and Cincinnati and to Vanderbilt and Yale Universities. Duke University received \$4500 for an eighteen-month theoretical study of low-temperature phenomena under the direction of F. London.

Air Research

ARDC's Report for 1952

The Air Research and Development Command, created in 1950 and made a major air command in 1951, is today an undertaking whose magnitude is indicated by the more than one-half billion dollars of Air Force funds allocated to research and development in the fiscal year 1953. The Command itself receives only thirteen percent of the total, but coordinates and evaluates the work done by non-Air Force agencies and private concerns financed by the remainder of the funds in addition to carrying out its own research program.

The range of activity of ARDC as outlined in its report on work done in 1952 is suggested by the following incomplete list of accomplishments: under its sponsorship the design and construction of twenty-four new types of military aircraft were in various stages of completion, supersonic bombers and atomic powered aircraft were being investigated, transistor and cosmic-ray research was supported, special clothing was developed to enable pilots to survive at high altitudes, the official world's speed record was broken by a combat-equipped jet interceptor, a geophysical research station was established on T-3, the ice island 135 miles from the North Pole, and a pair of monkeys were rocketed two hundred thousand feet above the earth and were recovered unharmed.

Scientific Manpower

National Manpower Council Reports

A 263-page document on the present scientific and professional manpower situation in the United States has been submitted to the White House by the National Manpower Council, a nonprofit survey group established two years ago at the Columbia University Graduate School of Business by General Eisenhower to provide a continuing appraisal of the nation's manpower problems and policies in a period of enduring emergency. The Council was supported by a grant from the Ford Foundation. Warning that "scientists and professional people cannot be stockpiled like commodities against future shortages", the Council examined in detail the problems of providing sufficient engineers, physicists, teachers, and doctors to satisfy future requirements.

"Only a purposeful and sustained effort can insure that the United States will have adequate resources of scientific and professional manpower to meet its needs," the Council concluded. "Neither reliance upon a single course of action nor the pursuit of separate and unrelated policies will enable the nation to attain this goal."

While the Council made it clear that it has no magic formula for ensuring the adequacy of manpower resources in the future, it did propose a fourteen-point program for action. The Council emphasized the need to develop a framework for the analysis of manpower shortages and to develop basic information about supply and demand as well as effective utilization of manpower—information, it said, which is now "grossly inadequate".

Among its recommendations, the Council called for the establishment of a presidential commission to determine how seriously the two-billion-dollar governmental research and development programs may be diverting colleges and universities from their primary responsibilities of teaching and carrying on basic research. It also recommended action by the President to provide civilian participation in decisions relating to manpower distribution for military and civilian needs where the recall of reservists is involved. This recommendation is consistent with the provisions of H. R. 3893, the bill described below.

Amendment of Reserve Act Proposed

Identical bills have been introduced in both houses of Congress aimed at providing for "the orderly and selective recall to active duty in the military services of members of the military reserves so as to afford the most effective utilization of manpower resources of the United States". The House bill, H. R. 3893, was introduced by Representative LeRoy Johnson of California, chairman of the House Sub-Committee on Military Affairs, on March 11th. S. 1551 was introduced on April 2nd by Senator Ralph E. Flanders of Vermont, a member of the Senate Armed Services Committee.

The bills are designed to amend the Armed Forces Reserve Act of 1952, under which reservists can be recalled to active duty solely at the discretion of the military without assurance that whatever special skills or training will have been acquired by reservists by the time of their recall will necessarily be put to use in the best interests of the nation. It has been pointed out that ultimately the military reserve is likely to include all ten million of the physically fit men between the ages of 18 and 30. Even now, twenty-five percent of those listed under the category of technical manpower in research and development are in reserve status.

The proposed amendment would provide for a nine-member National Manpower Board in the offices of the President to recommend criteria and procedures governing the call to active duty of reservists having special proficiency or experience in engineering, the physical sciences, and other specialized fields. The Board members, at least six of whom would be civilians, would be persons "thoroughly familiar" with the nation's mili-