

THE RESEARCH AND DEVELOPMENT BOARD
Washington 25, D. C.

RDB 173/9

17 January 1951

POLICY OF THE DEPARTMENT OF DEFENSE ON BASIC RESEARCH

1. STATEMENT

The Research and Development Board announces the adoption of the following policy:

(1) Since basic research is the essential foundation for all military applied research and development, it is in the interest of the Department of Defense to insure that adequate attention is given to basic research in those areas affecting national security and that the level of effort for the conduct of such research is stabilized. Accordingly, in order to assure proper emphasis, the funds obligated annually by each Department in support of basic research shall not be less than 6 per cent of the average of its research and development budgets for the preceding 5 years; and the funds obligated annually by the Department of Defense as a whole for the same purpose shall not be less than 30 million dollars.

(2) This policy implements in part the provisions of Section 214 (b) (2) and (4) of the National Security Act of 1947 as amended, and Section III L of the Directive of the Board.¹

2. DEFINITIONS

(1) Basic research is a theoretical or experimental study directed toward the increase of knowledge, either by advances into unknown areas or by detailed filling in of areas whose general boundaries are already known. Immediate practical application is not necessarily a direct objective of the investigator. However, such practical application, either immediate or in the future, is properly a concern of the Department of Defense.

¹RDB 1/6 14 September 1949.

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(2) Some basic research is performed under broad, inclusive, program-type developmental projects. Such effort, unless it is clearly identified as basic research, shall not be considered as coming under the provisions of this policy.

3. CLASSIFICATION OF BASIC RESEARCH BY THE MASTER PLAN

For the purpose of budgeting and other reviews, the Master Plan for Research and Development classifies basic research under military sponsorship as follows:

(1) Basic research for which the sponsor envisions specific military application supporting one technical objective substantially more than any other is classified in that technical objective;

(2) Basic research for which the sponsor envisions specific military application supporting two or more technical objectives, but no one technical objective primarily, is classified in the supporting research and development category;

(3) Basic research for which the sponsor cannot yet determine a specific military application is classified in the basic research category.

4. APPLICATION OF FINDINGS OF BASIC RESEARCH TO MILITARY PROBLEMS

(1) Every effort shall be made by the Departments and the Research and Development Board to identify and to disseminate research findings that may have military applications, regardless of whether the research was performed by the Department of Defense. These findings may result from purely basic research activity or from research done in conjunction with a development program.

(2) Continuous analysis shall be made by each Department of its basic research program to identify areas and programs that give promise of significant military application at some future time.

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5. BOARD RESPONSIBILITIES

(1) The Board will review all basic research being carried out within the Department of Defense and will determine that such effort is properly classified.

(2) The Board will determine the total planning figure for the basic research program of the Department of Defense.

(3) The Board will provide guidance to the Departments concerning shifts in emphasis within the basic research program:

(a) To insure an adequate program under budgetary limitations;

(b) To achieve the maximum potential benefit from the program; and

(c) To foster basic research in fields of science in which our limited knowledge especially restricts our military capabilities.

(4) Wherever possible, the Board will assist the Departments:

(a) To examine basic research not supported by the Department of Defense to discover possible military applications;

(b) To maintain liaison with the Interdepartmental Committee on Scientific Research and Development, the National Science Foundation, and other research agencies; and

(c) To coordinate the Department of Defense basic research program with those of other civil and government agencies.

BY DIRECTION OF THE BOARD:

Eric A. Walker

ERIC A. WALKER
Executive Secretary

Approved by the Board
at its 37th meeting,
17 January 1951

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DR. ALBERT E. LOMBARD, JR.

Education and Degrees: B.S. in Science - California Institute of Technology, 1928:

M.S. in Mechanical Engineering - California Institute of Technology, 1929:

Ph.D. in Aeronautics - California Institute of Technology, 1939.

Professional
Activities:

1929 to 1937 - Structural and Aerodynamic Engineer with Curtiss-Wright Corporation.

1937 to 1940 - Teaching fellow and Assistant Professor of Aeronautics and Mechanical Engineering, California Institute of Technology.

1940 to 1944 - Aircraft Production, War Production Board, Washington, D. C.

1945 to 1948 - Engineering Consultant on new product development, Consolidated-Vultee Aircraft Corporation.

1949 to present - Scientific Advisor, Directorate of Research and Development, DCS/D, Headquarters U. S. Air Force.

Publications:

- a. Articles in aeronautics journals pertaining to aircraft design.
- b. Thesis published by California Institute of Technology on "Flutter in Aircraft."

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Biographical Statement

John Gamble Kirkwood, Yale University, New Haven, Connecticut. Physical Chemistry

Born: Cotebo, Oklahoma; May 30, 1907

Degrees: S.B. University of Chicago, 1926; Ph.D. (chem.) Massachusetts Institute of Technology, 1929

National Research Fellow, Harvard University, 1929-30

Research Associate in physical chemistry, Massachusetts Institute of Technology, 1930-31

International Research Fellow, Leipzig and Munich, 1931-32

Research Associate, Massachusetts Institute of Technology, 1932-34

Assistant Professor of Chemistry, Cornell University, 1934-37

Associate Professor, University of Chicago, 1937-38

Todd Professor, Cornell University, 1938-47

Arthur A. Noyes Professor, California Institute of Technology, 1947-51

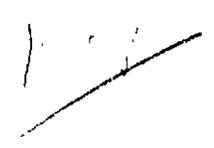
Sterling Professor of Chemistry and Chairman of the Department of Chemistry, Yale University 1951-

Member: National Academy of Sciences, American Philosophical Society, American Academy of Arts and Sciences, Theodore William Richards Medal, 1950

Associate Editor, Journal of Chemical Physics, 1941-
Journal of Physical Chemistry
Chemical Reviews

Civilian with Office of Scientific Research and Development, U.S.A. and U.S.N.

Dielectric polarization and loss in gases, liquids and high polymers; quantum theory of intermolecular forces and the equation of state of gases; theory of solutions of electrolytes; statistical mechanical studies of structure of liquids, fusion process and phase transitions in crystals; physical chemistry of the proteins; methods of fractionation of proteins; nature of the forces between protein molecules.



NATIONAL SCIENCE FOUNDATION

Washington 25, D. C.

Dr. Alan T. Waterman

Dr. Alan T. Waterman was appointed Director of the National Science Foundation by the President of the United States on April 6, 1951. From 1946 to 1951, Dr. Waterman was with the Office of Naval Research. He became Deputy Chief and Chief Scientist of that office in 1947 where he had primary responsibility for the scientific research program which the Navy carries on with universities throughout the country.

During World War II, Dr. Waterman served with the National Defense Research Committee, and in 1945 he was Chief, Office of Field Service, Office of Scientific Research and Development. For this work with the Office of Scientific Research and Development, he was awarded the Medal for Merit in 1948.

A graduate of Princeton University in 1913, Dr. Waterman received a Ph.D. in Physics from Princeton in 1916. After service with the Science and Research Division of the Army Signal Corps in World War I, he joined the faculty of Yale University and remained in the Department of Physics there until 1948, with leave of absence during 1927-28 to King's College, London, to Massachusetts Institute of Technology in 1937, and to the Office of Scientific Research and Development from 1942 to 1948. Dr. Waterman was awarded a Sc.D. from Tufts College on June 8, 1952.

On June 14, 1952 the Class of 1913, Princeton University awarded its Class Memorial Cup to Alan Tower Waterman "in recognition of his meritorious and outstanding service to his profession and his country."

Dr. Waterman has conducted research investigations in the field of conduction of electricity through solids; thermionic, photoelectric emission and allied effects; and electrical properties of solids.

He is a Fellow of the American Association for the Advancement of Science, the American Physical Society, the American Association of Physics Teachers and the New York Academy of Sciences. He is a member of the American Association of University Professors, Phi Beta Kappa, Sigma Xi, the Scientific Research Society of America, the Washington Philosophical Society, and the Washington Academy of Sciences.

He was born on Cornwall-on-Hudson, New York. Dr. and Mrs. Waterman live at 4711 Rodman Street, N. W., Washington. They have three sons and two daughters, all married.

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The National Science Foundation was established by law on May 10, 1950. The legislation creating the Foundation provides for a 24-member, part-time, policy-formulating National Science Board and a full-time Director who exercises executive responsibilities. Mr. Chester I. Barnard, retired President of the Rockefeller Foundation, is Chairman of the Board.

The principal responsibilities and functions of the Foundation are:
(a) to develop and encourage the pursuit of a national policy for the promotion of basic research and education in the sciences, (b) to initiate and support basic scientific research in the sciences through contracts and grants-in-aid, (c) to award scholarships and graduate fellowships in the sciences.