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## THE MOBILIZATION OF SCIENCE

IN the Senate of the United States on February 11, Mr. Kilgore introduced the following bill (S. 702), which was read twice and referred to the Committee on Military Affairs:

To mobilize the scientific and technical resources of the Nation, to establish an Office of Scientific and Technical Mobilization, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### DECLARATION OF POLICY

SECTION 1. The Congress hereby recognizes that the full development and application of the Nation's scientific and technical resources are necessary for the effective prosecution of the war and for peacetime progress and prosperity, and that serious impediments thereto consist in—

the unassembled and uncoordinated state of information concerning existing scientific and technical resources;

the lack of an adequate appraisal, and the unplanned and improvident training, development, and use, of sci-

entific and technical personnel, resources, and facilities in relation to the national need;

the consequent delay and ineffectiveness in meeting the urgent scientific and technical problems of the national defense and essential civilian needs;

the trend toward monopolized control of scientific and technical data and other resources with lack of access thereto in the public interest; and

the absence of an effective Federal organization to promote and coordinate, in the national interest, scientific and technical developments.

The purposes of this Act accordingly are—

(1) to appraise the current use of scientific and technical knowledge, facilities, and personnel, and to develop comprehensive national programs for the maximum use of science and technology in the national interest in periods of peace and war;

(2) to mobilize for the prosecution of the war all scientific and technical facilities and personnel;

(3) to facilitate after the war the transition of the national economy from the tasks of war to peacetime enterprise;

(4) to assemble, coordinate, and develop for use, in the public interest, all scientific and technical data and facilities; to facilitate access to scientific and technical information and literature and to aid and encourage the writing and publication thereof;

(5) to promote the full and speedy introduction of the most advanced and effective techniques—for the benefit of agriculture, manufacturing, distribution, transportation, communication, and other phases of productive activity; for economical and efficient Federal, State and local government; and for the national defense and general welfare;

(6) to aid, encourage, and protect the research and enterprise of inventors, scientists, technicians, scientific and educational institutions, research laboratories and Government establishments engaged in scientific and technical work, and to make their resultant discoveries and data more readily available, and without discrimination, to all sections of industry, agriculture, and the public, in order to aid the war effort at the present time and in order to promote full employment and higher standards of living after the war;

(7) to discover and develop substitutes for strategic and critical materials, and to promote the most beneficial use of agricultural, mineral, and other natural resources;

(8) to promote interest in scientific and technical education, and to provide for all qualified persons the means of scientific and technical training and employment;

(9) to provide guidance in scientific and technical matters to the President, the Congress, and all Federal, State, and local government agencies and establishments, and to contribute guidance and, in all proper cases, financial and other assistance to solution of the technical and scientific problems of industry, agriculture, and of any agency or establishment or individual inventor;

(10) to promote the maintenance and expansion of free enterprise by making available to smaller businesses the benefits of scientific advancement;

(11) to standardize, when in the public interest, scientific and technical designs, practices, and specifications; and

(12) to establish a national scientific and technical office to assure maximum cooperation and integration of the facilities and personnel of governmental and private agencies, institutions, and employers for the above purposes, and to coordinate the activity of these facilities and personnel, where necessary, in the national interest. This Act may be cited as the "Science Mobilization Act."

#### DEFINITIONS

##### SEC. 2. As used in this Act—

(a) "Scientific and technical facilities" shall include real property and personal property, tangible and intangible, used or intended to be used for scientific or technical purposes, programs, research, projects, and developments and shall include further all methods, processes, procedures, techniques, designs, specifications, patents, inventions, and scientific or technical information or knowledge of every description used or intended to be used for scientific or technical purposes in research and

development or in the production or supply of war or civilian goods or services.

(b) "Scientific and technical personnel" shall include all persons, excepting physicians and dentists, who have completed any course of study in any college or university in any branch of science or its practical application or who have had not less than an aggregate of six months' training or employment in any scientific or technical vocation.

(c) "Agency or establishment" shall mean any agency, board, department, office, bureau, or other body of the Federal or any State or local government, or any person, firm, or partnership engaged in business for profit, and any corporation, profit or nonprofit, association, school, college, and university.

#### ESTABLISHMENT OF INDEPENDENT OFFICE

SEC. 3. (a) There is hereby created, as an independent agency of the Federal Government, the Office of Scientific and Technical Mobilization (hereinafter referred to as "the Office") which shall be administered by an Administrator to be appointed by the President, by and with the advice and consent of the Senate, and to serve at the pleasure of the President. The Administrator shall receive a salary at the rate of \$12,000 a year. The Administrator shall appoint, fix the compensation, and define the authority and duties of such officers, employees, attorneys, and agents as he shall deem necessary to carry out the purposes and provisions of this Act and to transact the business of the Office. Such appointments shall be made in accordance with the provisions of the civil-service laws and regulations and the Classification Act of 1923, as amended: *Provided*, That when the Administrator determines it to be necessary in order to effectuate the purposes and provisions of this Act he may waive these requirements. The Office may make such reimbursement as it may deem necessary and proper for the traveling, subsistence, or other expenses incurred in the performance of official duties by its officers, employees, attorneys, agents, and by other persons or members of committees, boards, or other bodies designated by it to carry out such duties. The Office shall be located in or near the District of Columbia, but the Administrator may establish such branch offices outside of the District of Columbia area as may be required to carry out the purposes of the Act.

(b) Any person employed on a full-time basis by the Office shall receive no salary, wages, or other compensation from any source except the Office.

(c) There is hereby established within the Office a National Scientific and Technical Board (hereinafter referred to as the "Board") consisting of the Administrator, who shall be Chairman, and six other members, to be appointed by the President, and to include one representative each for industry, agriculture, labor, the consuming public, and two additional members at large who shall be scientists or technologists. Each such member shall receive compensation at the rate of \$10,000 a year. The Board and its several members shall perform such duties under the direction and control of the Adminis-

trator as he may assign to them; they shall have access to all information of the Office relating to the administration thereof.

(d) There is hereby created a National Scientific and Technical Committee consisting of the Board, one representative each for each of such Federal departments as the President shall designate, four additional representatives of the consuming public, three additional scientists or technologists, and six additional members representing labor and six additional members representing management (including small business), in the major fields of production and service to be appointed by the President and to serve without compensation, to advise and consult with the Administrator, who shall be the Chairman thereof, upon the basic policies governing the administration of this Act. Such committee shall meet regularly, not less than once a month.

(e) There is hereby transferred to the Office the powers and personnel of the National Roster of Scientific and Specialized Personnel of the War Manpower Commission, together with its records, furniture, and equipment, and all its unexpended balances of appropriations or other funds available to carry out its powers and duties.

#### POWERS OF THE OFFICE

SEC. 4. To effectuate the purposes of this Act, the Office shall be vested with the following powers and duties which it shall exercise and perform under the direction and control of the Administrator:

(a) To take and keep a census of scientific and technical facilities, requirements, and personnel in the United States and its possessions and to provide archives for all scientific and technical material coming into the possession of the Government or any agency or department thereof.

(b) To formulate and promote projects and programs for the development and use of scientific and technical facilities and personnel and, when necessary, to initiate and carry out such projects.

(c) To foster and develop scientific and technical methods, to promote their application in the national welfare, either within the Office or by other auspices, public or private, and to promote and provide training and participation in science and in its application.

(d) To ascertain and assess scientific and technical developments in relation to, and to study their impact upon, the national welfare, or any particular category thereof.

(e) To solicit and to receive aid and support from any source for the advancement of scientific and technical methods.

(f) To coordinate the scientific and technical data, methods, and facilities of, or available to, all agencies and departments of the Federal Government.

(g) To foster international cooperation in scientific discovery and the application thereof; to acquire information with respect thereto from other countries and their nationals; to exchange scientific and technical personnel and information with such countries; and to engage in other suitable forms of international collaboration relating to science and technology.

(h) To make available, upon request, to the President, to the Congress, and to other persons or establishments

(upon such conditions as the Administrator shall prescribe), technical guidance and assistance and any record or other data necessary therefor.

(i) To review specifications, standards, and designs of military and civilian products and services and their methods of production and supply and to recommend suitable simplifications and changes therein.

(j) To finance by loan, grant, exchange, purchase, or otherwise the operations or functions, or any of them, authorized by this Act, and, for the same purposes, to make or acquire any contract, guaranty, indemnity, stipulation, lease, or other instrument, to acquire, improve, and alter real and personal property, and to enter into any other transaction necessary or appropriate for the performance of its duties or powers.

(k) To acquire patents and patent rights, and to authorize the use thereof, subject to the provisions of section 7 of this Act, and to authorize the use or other disposition of any other property belonging to, or controlled by, the Office, upon such terms and conditions and for such compensation as the Administrator shall determine, which compensation shall be payable to the Office.

(l) To establish a system of merit awards to be granted to any agency, establishment, or person making any outstanding scientific or technical contribution to the national defense or the general welfare.

(m) To make, amend, and rescind appropriate rules and regulations to carry out the purposes of this Act and all the powers and duties vested in the Office, which rules and regulations shall have the force and effect of law.

(n) To avail the Office of the information, services, facilities, officers, and employees of any Federal establishment in carrying out the purposes and provisions of this Act.

(o) To conduct such research and investigation touching upon the use and development of scientific and technical facilities and personnel as the Office may deem necessary and appropriate to carry out the purposes of this Act.

#### MOBILIZATION OF PERSONNEL

SEC. 5. To mobilize scientific and technical manpower for the prosecution of the war and otherwise to carry out the purposes of this Act—

(a) Section 10 (a) of the Selective Training and Service Act of 1940, as amended, is further amended by adding at the end thereof the following:

“Any provision of this Act to the contrary notwithstanding—

“(1) whenever the Administrator of the Office of Scientific and Technical Mobilization deems it necessary, to carry out the purposes of the Science Mobilization Act, that occupational deferments be granted to persons engaged in any particular scientific or technical occupation or having or receiving any scientific or technical training, he shall certify to the Chairman of the War Manpower Commission that (1) such occupation or training is of a scientific or technical character, and (2) that it is critical in the war effort; and such Chairman shall thereupon approve or disapprove each such certification. In event of such approval, such Administrator shall there-

after determine, subject to such rules, quotas, schedules, and procedures as the Chairman of the War Manpower Commission may prescribe, the facts and circumstances pertinent to the occupational deferment of any person within the scope of such certification and whether any such deferment should be made;

"(2) any determination respecting occupational deferment made by the Administrator of the Office of Scientific and Technical Mobilization in accordance with the authority of this section, as amended, shall be conclusive upon all civilian local boards and any other civilian agencies functioning under this Act."

(b) During the existence of a state of war and for six months thereafter, the Administrator is authorized to prescribe and promulgate appropriate rules, regulations, procedures, and methods, subject to direction by the Chairman of the War Manpower Commission, for the training, classification, and employment of all scientific and technical personnel by any person, agency, or establishment, public or private.

#### MOBILIZATION OF FACILITIES

SEC. 6. To mobilize scientific and technical facilities for the defense of the United States and otherwise to effectuate the purposes of this Act—

(a) (1) During the existence of a state of war, whenever the Administrator determines, subject to review by the President, that (1) the use of any scientific or technical facility, or of any license, easement, privilege, or other right therein, is needed for the defense of the United States or the prosecution of the war; (2) such need is immediate and impending and such as will not admit of delay or adequate fulfillment by resort to any other source of supply; and (3) all other means of obtaining the use of such facility or of any right therein, upon fair and reasonable terms, for the defense of the United States or the prosecution of the war have been exhausted, he is authorized to requisition such facility and any right therein and to dispose of the same in such manner, not inconsistent with this Act, as he may determine to be necessary for the defense of the United States or the prosecution of the war upon the payment of fair and just compensation for such property to be determined in the same manner as provided in Public Law Numbered 274, Seventy-seventh Congress, as amended, except that the Administrator, subject to review by the President, shall make all determinations in the first instance, respecting fair value of such facility and right: *Provided*, That the requisitioning power herein granted shall not extend to any patent itself but shall be confined to licenses or any other right therein respecting user, together with the right to grant sublicenses.

(2) Whenever the Administrator determines that such facility or any right therein requisitioned pursuant to subsection (1) of this section is no longer needed for the defense of the United States or the prosecution of the war, he shall return the same to the person from whom it was requisitioned if such person desires return of the property or facility, in the same manner as provided respecting returns of requisitioned property in sections 1 and 2 of Public Law Numbered 274, Seventy-seventh

Congress, as amended, except that no such return shall be required of the Administrator until six months after the termination of the state of war and that any determination of fair value made in connection with such return shall be made by the Administrator in the first instance, subject to review by the President.

(3) The Administrator shall include in his reports directed to be made under section 11 of this Act a separate part with respect to his operations under this subsection.

(b) During the existence of a state of war, the Administrator is authorized to conduct investigations of and concerning the scientific and technical facilities used or capable of use in war or essential civilian production or supply with the view to ascertaining and evaluating the factors affecting efficiency in such production or supply. The Administrator shall submit to the producers and suppliers concerned, and to all appropriate Federal establishments, his recommendations of any improvements disclosed by his investigations to be necessary or desirable for the national defense or the prosecution of the war.

(c) The Administrator is authorized to represent any agency or establishment before the War Production Board or any other appropriate Federal establishment upon any application for allocation of, and priority ratings for, any critical material and equipment for use in scientific and technical research and development. All such applications shall be made only by and through the Office pursuant to appropriate regulations to be prescribed by the Administrator and approved by the Chairman of the War Production Board.

#### PRODUCTION OF THE PUBLIC INTEREST IN DISCOVERIES AND DEVELOPMENTS FINANCED BY THE UNITED STATES

SEC. 7. (a) Any provision of law to the contrary notwithstanding, the Office is hereby vested with the exclusive right to use, and with the exclusive right to license others to use, (1) any invention, discovery, patent, or patent right which has heretofore resulted, or shall hereafter result, from research or invention for the carrying on of which the United States or any department, agency, or establishment thereof either has heretofore contributed at any time since the declaration of national emergency on May 27, 1941, or shall hereafter contribute, any money, credit, physical facilities, or personnel; and (2) any invention, discovery, patent, or patent right which is at the time of the enactment of this Act, or shall hereafter become, to any extent the property of the United States or of any department, agency, or establishment thereof.

(b) The Office is authorized, subject to such rules and regulations relating thereto as the Administrator may adopt, to grant to any department, agency, or establishment of the United States a nonexclusive license to use any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section.

(c) The Office is authorized to grant to others than a department, agency, or establishment of the United States a nonexclusive license to use any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section upon such terms and conditions, including

payment to the Office of a fee or charge for user, as the Administrator may prescribe: *Provided*, (1) That no such license shall be granted unless the Administrator shall first be satisfied and shall find that no monopoly, monopolistic practice, or unfair competitive advantage will be promoted thereby, and (2) that the charge for user prescribed by the Administrator shall either be a uniform nominal fee or a charge graduated to the volume of production resulting from user, or such other scale of charges that shall be necessary or desirable in order to effectuate the purposes of the preceding provisions.

(d) Any owner or assignee of, or any person having an interest in, any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section shall be paid fair and just compensation for any deprivation of property right resulting from such vesting, to be determined in the same manner as provided in Public Law Numbered 274, Seventy-seventh Congress, as amended, except that the Administrator, subject to review by the President, shall make all determinations in the first instance respecting fair and just compensation: *Provided*, That the Office is also authorized to make suitable compensation, as determined by the Administrator with the approval of the Board, to individual inventors or discoverers or to individuals contributing to inventions or discoveries including employees of the Federal Government, as a reward for their inventions or discoveries or for their contributions thereto when such inventions or discoveries are deemed by the Administrator to be in the national interest and when they are vested in the Office by the provisions of subsection (a) above.

(e) Except as otherwise specifically provided in this Act, neither the Administrator nor any other department, agency, or establishment of the United States shall sell, assign, grant, or otherwise dispose of any invention, discovery, patent, patent right, license, or license right, which has been or shall become vested, acquired, or retained by them or any of them and any transaction or arrangement in violation of this subsection shall be void and of no effect.

(f) The Administrator is hereby authorized and directed (1) to prescribe and promulgate appropriate rules and regulations which shall thereupon have the force and effect of law for the enforcement of the provisions of this section, and (2) to require and incorporate in all licenses, sublicenses, and other instruments and writings made in pursuance of provisions of this Act, such terms and conditions as shall apply the intent and purpose of this section to the facts and circumstances of the particular transaction.

#### INFORMATION

SEC. 8. (a) It shall be the duty of all persons and establishments, when so requested by or in behalf of the Administrator, to furnish, to the best of their knowledge, any information, data, or record concerning scientific and technical facilities during the existence of a state of war and concerning scientific and technical personnel at all times. Any person or establishment refusing or willfully failing to furnish the same or willfully making any false or fraudulent statement in answer to any such request shall

upon conviction thereof, be fined not more than \$5,000 or imprisoned for not more than one year, or both.

(b) The Administrator is hereby directed to maintain the secrecy or restricted character, as the case may be, of any information or data coming into his possession or control under this Act, which is declared to be secret or restricted by other provision of law or the secrecy or restriction of which the Administrator deems otherwise essential to maintain in the public interest. There is hereby established a committee to consist of one member each representing the War Department, the Navy Department, the Office, and any such other Federal establishments as the President may designate which shall advise the Administrator respecting any matter or measure necessary to carry out the purpose of this section.

#### FUNDS AND FINANCES

SEC. 9. (a) The sum of \$200,000,000 is hereby authorized to be appropriated to carry out the provisions and purposes of this Act. Further sums are authorized to be appropriated as may be necessary and proper for the same purposes. Such sums or any part thereof, together with any moneys realized or received by the Administrator from his exercise of any power granted to him by this Act, may be designated and used at his direction as a revolving fund or otherwise to carry out any power so granted.

(b) Further to effectuate the purposes of this Act, the Administrator is authorized, whenever he deems it necessary and expedient, to create or to organize a corporation or corporations as instrumentalities for the more effective exercise and performance of his own powers and duties or those of the Office, or any part thereof. The Administrator may make loans to, or purchase in whole or in part from time to time, the capital stock of any such corporation for any purpose within the powers of the corporation, and on such terms and conditions as the Administrator may determine: *Provided*, That such capital stock shall be purchased and owned only by the Office.

#### SUBPENAS AND PENALTIES

SEC. 10. For the purposes of any investigations authorized by this Act, the Administrator and any official designated by him may administer oaths and affirmations, subpoena witnesses, take evidence, and require the production of books, papers, and other documents which the Administrator or such officer deems to be relevant or material to the inquiry. Such attendance of witnesses and the production of such documentary evidence may be required from any place in the United States or any Territory or possession thereof at any designated place of hearing. In cases of contumacy by, or refusal to obey a subpoena served upon any person, the district court for any district in which such person is found, resides, or transacts business, upon application by or on behalf of the Administrator, shall have jurisdiction to issue an order requiring such person to appear and give testimony or to appear and produce documents, or both; and any failure to obey such order of the court may be punished as a contempt thereof. Witnesses subpoenaed under this section shall be paid the same fees and mileage as are paid witnesses in

the district courts of the United States. No person shall be excused from complying with any requirements under this section because of his privilege against self-incrimination, and the immunity provisions of the Compulsory Testimony Act of February 11, 1893 (U. S. C., 1934 edition, title 49, sec. 46), shall apply with respect to any individual who specifically claims such privilege. Any person who willfully violates any order, rule or regulation promulgated by the Administrator under the authority of this Act, shall, upon conviction thereof, be fined not more than \$5,000 or imprisoned for not more than one year, or both.

#### PERIODIC REPORTS

SEC. 11. The Administrator shall render a report in writing to the President and to the Congress in January of each year summarizing the activities of the Office in

the calendar year just ended and reporting on the status and progress of science and on scientific and technical problems affecting the public interest together with such recommendations as he may deem appropriate within the purposes of this Act. During a state of war, he shall make interim reports quarterly during each of the months of January, April, July, and October.

#### SEVERABILITY CLAUSE

SEC. 12. If any clause, sentence, paragraph, or part of this Act shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof but shall be confined in its operations to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.

## SOME OBSTACLES IN THE PATH TOWARDS AN OPTIMUM DIET. II

By Dr. A. J. CARLSON

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(G) *Poverty*. Many people are undoubtedly inclined to put poverty as obstacle No. 1, even on the road to a good or adequate diet not to say an optimum diet, and I am not quarreling with the relative importance of any of the factors, as I indicated in the beginning. Whatever the percentage of truth there is in the view that forty million, even a hundred million, Americans are badly nourished, there can be no doubt that financial handicaps may be serious enough to prevent the purchase and consumption of food adequate for good health. And even if only one per cent. of our fellow citizens belong in this category in this land of abundance of good foods, that would be a reflection on our wisdom and our competence. But among men, as among animals below man, securing food without labor, without scratching leads in the long run to deterioration.

Among the wants and fears of man in many lands are the lack of good foods and the fear of starvation. Sir John B. Orr, the British war-time food administrator, has recently proposed that this seemingly simple aspect of the "Atlantic Charter" should be our primary concern. But even this is by no means simple. For in absence of epidemics, all species, man included, tend to reproduce beyond the limits of an adequate food supply for all. So a necessary corollary to freedom from the want of good food, and freedom from the fear of starvation everywhere, is planned parenthood. To me at least, this seems as humane, reasonable and necessary as our civilized and scientific endeavors to prevent and control the other form of universal human suffering—disease.

The financially poor, the financially unfortunate appear to have been with us throughout recorded history. The common saying is: "The poor will always be with us." Maybe so, at least in a relative sense. For there is also poverty in foresight and poverty in individual endeavor. In so far as this is due to poverty in heredity, common sense seems to say that, as knowledge grows, we must apply new measures to decrease the production of chicks that chirp but can not or will not scratch. Unless reason based on understanding effectively guides social evolution of tomorrow in that direction, I see no escape from the degeneration that invariably follows biologic parasitism, except the ancient "law of tooth and claw." The killing of millions of pigs for fertilizer, and restricting the production of such important foods as wheat and corn, all by Federal regulation, do not (in my judgment) square with our concern for an optimum diet of man (the poor included), even in our own land.

(H) *Appetite*. We know to-day very much less about the precise mechanism of appetite for food than we know about the mechanism of hunger, but stated briefly, appetite for food in contrast to hunger does not seem to be primarily inherited. It seems to be a memory of previous pleasant experiences with foods, pleasant experiences in the sense of taste, odor and visual appearance of foods. One fact stands out clearly in the matter of appetite, and that is this: All normal people seem to be able to acquire a liking or appetite for any kind of substance that can serve the nutrition of man. This, I think, is a factor of safety as well as a factor of danger for the human dietary.