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U.S. DEPARTMENT OF COMMERCE

BRIEFING HANDBOOK



SCIENCE AND TECHNOLOGY

National Bureau of Standards
National Technical Information Service
Office of Telecommunications
Patent and Trademark Office

Assistant Secretary for Science and Technology

MISSION

The Assistant Secretary for Science and Technology directs, oversees and coordinates the scientific and technological programs of the Department; she also serves as chief advisor to the Secretary and other Commerce officials on science and technology.

Specifically, the Assistant Secretary exercises policy direction and general supervision over the following six operating units:

National Bureau of Standards
Patent and Trademark Office
National Technical Information Service
Office of Telecommunications
Office of Product Standards
Office of Environmental Affairs

In general, the activities of all these units fall into two major categories:

1. The conduct of research to obtain data required for scientific and technical developments;
2. The promotion of the application of technology.

The first category includes the work on basic measurements, standards and the properties of materials at the National Bureau of Standards, and the research on telecommunications science and technology in the Office of Telecommunications.

The second category includes the applied technology mission of the National Bureau of Standards, the administration of the patent and trademark laws by the Patent and Trademark Office, the information dissemination functions of the National Technical Information Service, the policy analysis and spectrum management support activities of the Office of Telecommunications, the national and international standardization objectives of the Office of Product Standards, and the environmental control concerns of the Office of Environmental Affairs.

In carrying out the Office's mission of advancing science and technology in order to foster, serve and promote the Nation's economic development, the Assistant Secretary directs and participates in a number of activities:

o Stimulates research and development work in the private sector, including some direct sponsorship of industry, university and nonprofit scientific activities.

o Promotes use of Government science and technology by the private sector.

o Develops and promulgates basic standards and regulations for protection of the consumer and of the environment.

o Provides for recognition, protection and dissemination of technological information.

o Develops improved methods for assessing and forecasting the status of foreign science and technology and its impact on our domestic business and international trade.

o Works to improve the understanding of how science and technology contribute to productivity, employment, competitiveness and our overall economic well-being.

MISSION

The mission of the Office of Environmental Affairs is to:

1. Provide scientific and technical review and evaluation of environmental issues relevant to the mission of the Department.
2. Provide coordination and guidance of all appropriate Department of Commerce (DoC) agencies as a means of optimizing the Department's contributions to the solution of national problems of environmental quality.
3. Serve as the Department's principal point of contact with the Council on Environmental Quality (CEQ) and with other organizations, public and private, domestic and international, on environmental matters of concern to the Department as a whole.
4. Critique proposed Federal environmental standards which significantly affect American business, and prepare papers to assist in formulation of the Department's position on such proposals.
5. Review plans, procedures and actions within the Department for complying with the provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), (the Act), and related Executive Orders 11514, as amended, and 11752.
6. With the assistance of affected operating units, analyze the combined environmental and economic impact of actions proposed by other agencies in statements required by Section 102(2)(C) of the Act and referred to Commerce for comment; assist in formulation of the Department's position on these actions; and prepare statements required by Section 102(2)(C) for Commerce programs.

Office of Product Standards

MISSION

To strengthen the ability of the Department to contribute to the development, coordination, and evaluation of U.S. domestic and international product standardization policies which may substantially affect U.S. commerce.

1. MISSION

The National Bureau of Standards was established by an act of Congress in 1901. The original act along with subsequent amendments authorizes the Bureau:

- To provide central reference bases for the physical and engineering sciences necessary for increasing productivity, equity in trade, fair regulation, efficiency in Government and the advancement of science and technology. Reference bases required by industry, commerce, Government, and academia include national standards, evaluated data, measurement methods, and advisory services.
- To provide technical support in promoting the public and U.S. benefit in domestic and international standardsmaking.
- To serve as a national technical resource, responding to specific legislative and executive assignments.

Basic Legislative Assignments

- Custody, maintenance, development, and promotion of the national standards of measurement.
- Determination of physical constants and properties of materials.
- Development of methods for testing materials, mechanisms, and structures.
- Promotion of standard practices incorporated in codes and specifications.
- Provision of scientific and technical services to Government agencies.
- Invention and development of devices to serve Government needs.

Additional Legislative and Executive Assignments

- Standard Reference Data
- Computer Science and Technology
- Fair Packaging and Labeling
- Energy-Related Invention Evaluation
- Fire Research
- Consumer Product Safety
- Experimental Technology Incentives
- Solar Heating and Cooling
- Appliance Energy Labeling
- Coal Mine Health and Safety
- Radiation Health and Safety
- Appliance Efficiency

NATIONAL TECHNICAL INFORMATION SERVICE

William T. Knox, Director

Mission:

To make the results of Government technological research and development more readily available to the nation. The NTIS mandate is to:

- o collect from worldwide sources, classify and catalog technical and other publications, film, computer programs, data files, engineering drawings, computer printouts, and other records.
- o disseminate such information to business and industry, through the preparation of abstracts, digests, translations, bibliographies, indexes, and microfilms, and other reproductions of original publications.
- o promote wider private sector use of Government inventions.

OFFICE OF TELECOMMUNICATIONS

STATEMENT OF MISSION

The mission of the Office of Telecommunications in the Department of Commerce is to assist the Department in fostering, serving, and promoting the nation's economic development and technological advancement by improving man's comprehension of telecommunication science and by assuring effective use and growth of the nation's telecommunication resources.

In carrying out this mission, the Office

- ☒ Conducts research needed in the evaluation and development of policy as required by the Department of Commerce
- ☒ Assists other government agencies in the use of telecommunications
- ☒ Conducts research, engineering and analysis in the general field of telecommunication science to meet government needs
- ☒ Acquires, analyzes, synthesizes, and disseminates information for the efficient use of the nation's telecommunications resources
- ☒ Performs analysis, engineering, and related administrative functions responsive to the needs of the Director of the Office of Telecommunications Policy, Executive Office of the President, in the performance of his responsibilities for the management of the radio spectrum
- ☒ Conducts research needed in the evaluation and development of telecommunication policy as required by the Office of Telecommunications Policy, pursuant to Executive Order 11556.

Patent and Trademark Office

MISSION

The mission of the Patent and Trademark Office is threefold:

- o to examine patent applications and grant patents, in order to provide incentives for making and disclosing inventions and for investing in and commercializing inventions.
- o to examine trademark applications and register trademarks, in order to protect business investments and to protect consumers from deception.
- o to collect, classify and disseminate technology disclosed in patents.

Assistant Secretary for Science and Technology

MAJOR STATUTORY AUTHORITIES

Public Law 87-405, 15 U.S.C. 1507
February 16, 1962

MAJOR STATUTORY AUTHORITIES

The Office of Environmental Affairs, in response to the requirements of the National Environmental Policy Act of 1969 (NEPA), reviews the Environmental Impact Statements (EIS's) prepared by other Federal agencies by:

- o conducting evaluations, within the scope of the scientific and technological expertise in the Office;
- o soliciting other Departmental comments through the Department's Environmental Work Group (EWG) chaired by the Deputy Assistant Secretary for Environmental Affairs (DAS/EA); and
- o integrating all comments (including resolution of conflicting comments where feasible) into a single Departmental response.

In addition, the Office also generates the EIS's required by the Department's "major Federal actions" by:

- o determining when the EIS is required;
- o coordinating the internal reviews of the environmental discussion papers, i.e., preliminary draft EIS's, by the EWG;
- o overseeing the distribution of the draft EIS's to the Council on Environmental Quality (CEQ), other Federal agencies, and the public;
- o receiving the subsequent comments, and ensuring that such comments are reviewed and addressed adequately in the final EIS.

Office of Product Standards

MAJOR STATUTORY AUTHORITIES

Title 15 U.S.C., chapters 6, 7, 25, 26, 39.

Act of March 3, 1901, Section 2 (15 U.S.C. 272, as amended).

Act of February 14, 1903, Section 3 (15 U.S.C. 1512, as amended).

2. NBS STATUTORY AUTHORITIES

A. NBS Basis for Appropriations

[1] ORGANIC ACT OF THE NATIONAL BUREAU OF STANDARDS - March 3, 1901
(15 USC 272).

Provisions:

- ° The custody, maintenance, and development of the national standards of measurement, and the provision of means and methods for making measurements consistent with those standards, including the comparison of standards used in scientific investigations, engineering, manufacturing, commerce, and educational institutions with the standards adopted or recognized by the Government.
- ° The determination of physical constants and properties of materials when such data are of great importance to scientific or manufacturing interests and are not to be obtained of sufficient accuracy elsewhere.
- ° The development of methods for testing materials, mechanisms, and structures, and the testing of materials, supplies, and equipment, including items purchased for use of Government departments and independent establishments.
- ° Cooperation with other governmental agencies and with private organizations in the establishment of standard practices, incorporated in codes and specifications.
- ° Advisory service to Governmental agencies on scientific and technical problems.
- ° Invention and development of devices to serve special needs of the Government.

Authority:

All activities performed by the Bureau under the Organic Act are the result of delegation of authority from the Secretary of Commerce (by Departmental or Executive Order).

Funding:

NBS operates under a continuing authorization for appropriations and positions (excepting Standard Reference Data and Fire Program). Operations are conducted through the NBS Working Capital Fund for both direct appropriations and reimbursements from other agencies.

[2] MAJOR ORGANIC ACT AMENDMENTS

1950 - First complete restatement of NBS function since its original enactment. Establishment of the Working Capital Fund.

1972 - Enlarged Bureau's "audience" for which it could perform its functions from essentially domestic groups to include friendly foreign governments and their institutions.

- Authorizing NBS scientists and technical personnel to teach or train at institutions of higher education on part-time noncompensated basis.

1974 - Established Fire Research Center.

[3] STANDARD REFERENCE DATA ACT - July 11, 1968 (15 USC 290).

Provisions:

"Secretary of Commerce is authorized and directed to provide or arrange for the collection, compilation, critical evaluation, publication, and dissemination of standard reference data."

° Authorized Secretary of Commerce to obtain copyright of standard reference data for United States.

Authority:

National Standard Reference Data System was established at NBS.

° Administered by Office of Standard Reference Data.

° Composed of a network of data centers located in Government agencies, academic institutions, and nongovernment laboratories throughout the Nation.

° Initiated publication of Journal of Physical and Chemical Reference Data; 32 of top 50 industrial corporations subscribe.

Funding:

Authorized appropriations for three fiscal years; NBS authorization renewed through 1978 (P. L. 94-49).

[4] NOISE CONTROL ACT OF 1972 - (42 USC 4907).

Provisions:

"EPA is authorized to: (B) development of improved methods and standards for measurement and monitoring of noise, in cooperation with the National Bureau of Standards..."

Authority:

EPA to cooperate with NBS in developing improved methods and standards for measurement and monitoring of noise.

Funding:

Other Agency Agreement (EPA to pay for services of NBS). Direct appropriations.

[5] FAIR PACKAGING AND LABELING ACT - (15 USC 1454(d)).

Provisions:

"Whenever Secretary of Commerce determines there is undue proliferation of weights, measures, or quantities in consumer commodity packaging... and such undue proliferation impairs ability of consumers to make value comparisons, he shall request manufacturers,...to participate in development of voluntary product standards...

Each officer or agency...shall transmit to Congress in January of each year a full and complete description of activities...for administration and enforcement of this Act...

A copy of each regulation promulgated...transmitted to Secretary of Commerce, who shall (1) transmit copies...to State officers and agencies, (2)...promote greatest practicable extent uniformity in State and Federal regulation..."

Authority:

Authority for this program delegated by Secretary of Commerce to Director of National Bureau of Standards.

Funding:

Direct appropriations.

[6] BROOKS ACT - October 30, 1965 (5 USC 630-630g-1).

Provisions:

"Secretary of Commerce is authorized: (1) to provide agencies, and the Administrator of General Services...with scientific and technological advisory services relating to automatic data processing and related systems, (2) to make appropriate recommendations to the President relating to the establishment of uniform Federal automatic data processing standards. Secretary is authorized to undertake necessary research in the sciences and technologies of automatic data processing computer and related systems..."

Authority:

Established Institute for Computer Sciences and Technology.

° Since 1966, program has produced 46 standards and guidelines as Federal Information Processing Standards publications.

Funding:

Direct appropriations.

B. Authorize NBS Activity with Funding Appearing Explicitly in Another Agency's Budget

[1] FIRE PREVENTION AND CONTROL ACT OF 1974 - October 29, 1974
(15 USC 2201).

Provisions:

Established within DoC a Fire Research Center, now at NBS.

"Secretary is authorized to conduct...a fire research program, including:

- ° Basic and applied fire research
 - physics and chemistry of combustion processes
 - dynamics of flame ignition, flame spread, flame extinguishment
 - composition of combustion products
 - early stages of fires in buildings and other structures
 - behavior of fires involving all types of buildings, structures, contents
 - biological, physiological, and psychological factors affecting humans in this area."

Authority:

Fire Research Center officially established on April 28, 1975. Two large divisions organized around Fire Science and Fire Safety Engineering.

[2] FIRE PREVENTION AND CONTROL ACT (AMENDMENTS) - (P. L. 94-411).

Provisions:

Authorization to be appropriated such sums as may be necessary to carry out the provision of the Fire Prevention and Control Act of 1974 through September 30, 1978. Combines the NFPCA and NBS authorizations into one authorization.

Fire Authorizations

FY 1977

NBS Fire Research Center - \$5.5 million
FPCA - \$15.0 million

FY 1978

NBS - \$6.0 million
FPCA - \$20.0 million

[3] FEDERAL NONNUCLEAR ENERGY RESEARCH AND DEVELOPMENT ACT (42 USC 5901).

Provisions:

Section 14: "The National Bureau of Standards shall give particular attention to the evaluation of all promising energy-related inventions, particularly those submitted by individual inventors and small companies for the purpose of obtaining direct grants from the Administrator. The National Bureau of Standards is authorized to promulgate regulations in the furtherance of this section."

Authority:

NBS Office of Energy-Related Inventions was established on March 30, 1975.

- ° As of March 31, 1976, the Office has received about 1,804 requests for invention evaluation. Now receive about 8.6 per day.
- ° Approximately 794 inquiries have shown White House or Congressional interest. Now receive about 1.3 per day.
- ° Two inventions have been identified for recommendation to ERDA and three are in the final stages of preparation for recommendation. An additional 54 are undergoing indepth evaluation for potential recommendation.

Funding:

Authorization of appropriations for NBS in line item in ERDA authorization of appropriations legislation authorizes \$1.25 million for NBS Office of Energy-Related Inventions.

C. Authorize NBS Activity

[1] SOLAR HEATING AND COOLING DEMONSTRATION ACT OF 1974 - September 3, 1974 (42 USC 5501).

Provisions:

"The Secretary (of HUD), utilizing the services of the Director of the National Bureau of Standards, and in consultation with the Administrator and Director shall determine, prescribe and publish (A) interim performance criteria for

combined solar heating and cooling components and systems to be used in residential dwellings, (B) interim performance criteria for such dwellings themselves..."

- Authorized Director of the National Bureau of Standards to provide development and demonstration of technology for solar heating and cooling.

Authority:

- NBS Center for Building Technology worked with HUD in development of solar and heating performance criteria.

--cited by HUD in Congressional testimony as a major accomplishment in FY 1975.

- CBT to continue in cooperation with HUD and ERDA in implementation of major demonstration projects.

--development of test procedures,
--monitoring and evaluation of performance of such systems.

Funding:

Authorizes \$5 million for HUD to carry out its functions and to reimburse NBS and GSA in FY 1976--an additional \$50 million (total for NASA, HUD, and sub-contractors including NBS) for FY 1976-1979.

[*2] ENERGY POLICY AND CONSERVATION ACT OF 1975 - (P. L. 94-163, 89 Stat 871-969).

Purpose:

To increase domestic energy supplies and availability; to restrain energy demand and to prepare for energy emergencies.

Provisions:

Energy Conservation Program for consumer products other than automobiles.

- Consumer products covered under Act:
 - Room and central air-conditioners
 - Refrigerators and refrigerator-freezers
 - Freezers
 - Dishwashers

* NOTE: The Energy Policy and Conservation Act of 1975 falls under category B. AUTHORIZE NBS ACTIVITY WITH FUNDING APPEARS EXPLICITLY IN ANOTHER AGENCY'S BUDGET as well as category C. AUTHORIZE NBS ACTIVITY.

- Clothes dryers
- Kitchen ranges and ovens
- Water heaters
- Home heating equipment, including furnaces
- Television sets
- Clothes washers
- Humidifiers and dehumidifiers
- Any other type FEA determines that average annual per household energy use by products exceeds 100 kilowatt hours per year.

o Test Procedures

- FEA shall by rule prescribe test procedures for determining energy use or energy efficiency for each class.
- NBS shall develop test procedures for estimated annual operating costs and one other useful measure of energy consumption.

"FEA shall direct NBS to develop test procedures for determination of (A) estimated annual operating costs of covered products...(B) at least one other useful measure of energy consumption of such products which FEA determines is likely to assist consumers..."

If Administrator has classified type of product as covered product under section 322(b), Administrator may, ...direct NBS to develop and publish proposed test procedures for such...product..."

o Labeling

- FTC shall prescribe labeling rules for all covered products. Labels shall contain description of product, description of test procedures used to determine energy efficiency of product.
- FTC shall enforce labeling provisions.

o Energy Efficiency Standard

- FTC within 180 days shall prescribe energy efficiency improvement target for each class of product--targets designed to achieve not less than 20 percent energy efficiency of products by 1980 and require manufacturers to submit reports on improvements of products.

--Energy Efficiency Standards to be prescribed by following procedure:

- Publish advance notice of proposed rulemaking including energy efficiency level proposed to be required; invite comments; etc.

o Authorization of Appropriations

- \$1,100,000 for FY 1976
- \$ 700,000 for FY 1977
- \$ 700,000 for FY 1978

◦ Federal Actions with Respect to Recycled Oil

--To encourage the recycling of used oil and to promote the use of recycled oil.

"As soon as practicable after date of enactment of Act, the National Bureau of Standards shall develop test procedures for the determination of substantial equivalency of re-refined or otherwise processed used oil and new oil or additives with new oil for a particular end use. As soon as practicable after development of such test procedures, NBS shall report such procedures to the Federal Trade Commission."

--FTC to prescribe test procedures and labeling requirements.

--FTC to encourage procurement of recycled oil for Federal use and educate public on merits of using recycled oil.

[3] ENERGY CONSERVATION AND PRODUCTION ACT OF 1976 - (P. L. 94-385).

Purpose:

To amend the Federal Energy Administration Act of 1974 to extend the duration of authorities under such Act until September 30, 1977; to provide an incentive for domestic production; to provide for electric utility rate design initiatives; to provide for energy conservation standards for new buildings and industrial plants.

Provisions:

Amends the Energy Policy and Conservation Act providing that FEA shall direct NBS to develop energy efficiency improvement targets for major energy consuming household products.

Promulgation of performance standards:

◦ Require HUD, in consultation with FEA, Commerce, NBS, and GSA to develop and promulgate performance standards for new commercial and residential buildings. Commercial standards within three years, residential standards within three years. HUD directed to also use services of the National Institute of Building Sciences.

◦ Require standards to take into account regional climatic conditions, probable cost effects, and benefits to be derived.

◦ Provide for periodic review and update of standards by HUD.

◦ Provide for extension up to six months of deadlines on final standards.

◦ Monitoring of State and local adoption of energy conservation standards.

Require HUD to:

--Monitor progress of states in adopting enforcing standards.

--Identify problems inhibiting implementation of standards.

--Evaluate effectiveness of prevailing standards.

Standards shall be sent to Congress to determine whether sanctions; i.e., such as withholding of Federal financial assistance, shall become effective to enforce standards.

[4] METRIC CONVERSION ACT OF 1975 - (P. L. 94-168).

Provisions:

"Consultation by the Secretary of Commerce with the National Conference of Weights and Measures in order to assure that State and local weights and measures officials are appropriately involved in metric conversion and assisted in their efforts to bring about timely amendments to laws...Financial and administrative services, ...needed by the Board, may be obtained by the Board from the Secretary of Commerce..."

° To establish a national board to coordinate the voluntary conversion to the metric system of measurement in the United States.

--Establishes a national policy to coordinate the voluntary conversion to the metric system.

--To make the metric system the predominate, but not exclusive, system of measurement in the United States.

--Establishes United States Metric Board

- 17-member Board
- Board to coordinate voluntary plans to convert
- Board may recommend future programs or legislation that may prove necessary
- Board shall cease to exist when Congress determines its mission is ended
- Board will undertake education programs to aid public understanding of metric.

[5] RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 - (P. L. 94-580).

Purpose:

To provide technical and financial assistance for the development of management plans and facilities for the recovery of energy and other resources from discarded materials and for safe disposal of discarded materials, and to regulate management of hazardous waste.

Provisions:

° Establishes in EPA an Office of Solid Waste to provide technical and financial assistance to State and regional agencies and to utilize information, facilities, personnel, and other resources of Federal agencies, including National Bureau of Standards and Census Bureau, on reimbursable basis, to perform research and analyses and conduct studies and investigations related to resource recovery and conservation and to otherwise carry out Administrator's functions under this Act.

- EPA shall collect and coordinate information on discarded materials, management practices, resource recovery, hazardous substances, etc., and maintain a central reference library.
- EPA shall study and report on discarded material from mining, including disposal, sources and volume, potential dangers, and alternatives.
- EPA, ERDA, FEA, FPC. to study solid waste disposal on land, including sludge and effects on air and water, etc.
- EPA to identify and classify hazardous wastes and develop standards applicable to generators of hazardous waste, operators of hazardous waste treatment, storage and disposal facilities.

Duties of Secretary of Commerce in Resource Conservation and Recovery:

- Development of Specifications for Secondary Materials--DoC, acting through NBS, and in conjunction with national standards-setting organizations in resource recovery, shall, after public hearings, and not later than two years after the date of the enactment of this Act, publish guidelines for the development of specifications for the classification of materials recovered from waste which were destined for disposal. The specifications shall pertain to the physical and chemical properties and characteristics of such materials with regard to their use in replacing virgin materials in various industrial, commercial, and Governmental uses. In establishing such guidelines, the Secretary shall also, to the extent feasible, provide such information as may be necessary to assist Federal agencies with procurement of items containing recovered materials. Secretary shall continue to cooperate with national standards-setting organizations, as may be necessary, to encourage the publication, promulgation and updating of standards for recovered materials and for the use of recovered materials in various industrial, commercial, and Governmental uses.
- Federal Procurement--Each Federal procuring agency shall procure items composed of highest percentage of recovered materials practicable. GSA to make determination on basis of NBS guidelines.

D. NBS Mentioned In Bill

[1] CONSUMER PRODUCT SAFETY ACT OF 1972 - (15 USC 2056).

Provisions:

"Consumer Product Safety Commission shall, ..., utilize the resources and facilities of the National Bureau of Standards, ...to perform research and analyses related to risks of injury associated with consumer products, develop test methods, conduct studies and investigations, and provide technical advice and assistance..."

Funding:

Other Agency Agreement (reimbursable funds from CPSC).

E. NBS Activities Under Executive Order

[] PRIVACY ACT OF 1974 - (5 USC 552a) December 31, 1974.

Provisions:

"Commission shall: (1) make a study of the data banks, automated data processing programs, and information systems of governmental, ...to determine the standards and procedures in force for protection of personal information... (C) examine standards and criteria governing programs, policies, and practices relating to the collection, soliciting, processing, use, access, integration, dissemination, and transmission of personal information."

° Included provisions for the development of standards for safeguarding computer security.

Authority:

OMB directed NBS to provide technical guidance for Privacy Act.

NATIONAL TECHNICAL INFORMATION SERVICE

William T. Knox, Director

Introduction:

The National Technical Information Service (NTIS) was established by the Secretary on September 2, 1970. The NTIS Director is appointed by the Secretary and reports to the Assistant Secretary for Science and Technology.

OFFICE OF TELECOMMUNICATIONS

MAJOR STATUTORY AUTHORITIES

Two streams of authority converge to provide the OT function and mission. These are (1) the sections of Title 15 of the U.S. Code that codify a 1950 act relative to functions of the National Bureau of Standards (NBS) and (2) Presidential authority under Section 305 of the Communications Act to manage Federal use of the frequency spectrum, transferred to OTP by Reorganization Plan No. 1 of 1970, which also established OTP.

Briefly, the Title 15 authority provides for studies of the transmission of radio waves and the compilation of information on this subject. For example, the microwave relays that criss-cross the countryside of every advanced nation depend on such studies. Radio waves may ricochet from object to object in their journey, causing troublesome signal delays that have to be understood for proper system design.

Also authorized by Title 15 are advisory services to government agencies, accompanied by the necessary hard science research. The design of extremely long-range radar is an illustration of this.

The applicable portions of the statute state:

1. 15 USC 272 -- Functions of the Secretary of Commerce

"The Secretary of Commerce (hereinafter referred to as the 'Secretary') is authorized to undertake the following functions:

- (c) The development of methods for testing materials, mechanisms, and structures, and the testing of materials, supplies, and equipment, including items purchased for use of Government department and independent establishments.
- (d) Cooperation with other government agencies and with private organizations in the establishment of standard practices, incorporated in codes and specifications.
- (e) Advisory service to government agencies on scientific and technical problems.
- (f) Invention and development of devices to serve special needs of the Government.

"In carrying out the functions enumerated in this section, the Secretary is authorized to undertake the following activities and similar ones for which need may arise in the operations of government agencies, scientific institutions, and industrial enterprises:

- (12) the investigations of the conditions which affect the transmission of radio waves from their source to a receiver;
- (13) the compilation and distribution of information of such transmission of radio waves as a basis for choice of frequencies to be used in radio operations;

- (18) the prosecution of such research in engineering, mathematics, and the physical sciences as may be necessary to obtain basic data pertinent to the functions specified herein; and
- (19) the compilation and publication of general scientific and technical data resulting from the performance of the functions specified herein or from other sources when such data are of importance to scientific or manufacturing interests or to the general public, and are not available elsewhere, including demonstrations of the results of the (office's) work by exhibits or otherwise as may be deemed most effective..."

2. 15 USC 273 -- Functions for Whom Exercised

"The (office) is authorized to exercise its functions for the Government of the United States and for international organizations of which the United States is a member; for governments of friendly countries; for any state or municipal government within the United States; or for any scientific society, educational institution, firm, corporation, or individual within the United States or friendly countries engaged in manufacturing or other pursuits requiring the use of standards or standard measuring instruments: Provided, That the exercise of these functions for international organizations, governments of friendly countries and scientific societies, educational institutions, firms, corporations, or individuals therein shall be in coordination with other agencies of the United States Government, in particular the Department of State in respect to foreign entities."

3. 15 USC 1512 -- Powers and Duties of Department

"It shall be the province and duty of said Department to foster, promote, and develop the foreign and domestic commerce, the...manufacturing...industries..."

The 1970 Reorganization Plan was implemented by Executive Order 11556. Section 13 of the order charges the Commerce Department with spectrum management backup to OTP, with policy research backup, and with hard science research. The Secretary of Commerce has made 15 USC 272 and 273 applicable to OT, with respect to telecommunications technology, by his authority under Reorganization Plan No. 5 of 1950.

Patent and Trademark Office

MAJOR STATUTORY AUTHORITIES

- o Title 35 of the United States Code
- o Trademark Act of 1946, as amended,
15 U.S.C. 1501 et seq.

ASSISTANT SECRETARY FOR SCIENCE AND TECHNOLOGY

HISTORICAL BACKGROUND

The Office of the Assistant Secretary for Science and Technology was established by Act of February 16, 1962 (PL 87-405). The departmental elements which were combined under the jurisdiction of the new Assistant Secretary included the Weather Bureau, Coast and Geodetic Survey and the Environmental Research Laboratories (all becoming a part of the Environmental Sciences Services Administration in 1964), the National Bureau of Standards and the Patent Office.

A major change in the S&T area occurred when the National Oceanic and Atmospheric Administration (NOAA) was created as a separate agency within the Department in October, 1970, combining ESSA and elements of other Departments.

The following new organizations were added to the Office of the Assistant Secretary for Science and Technology in 1970: Office of Environmental Affairs, National Technical Information Service, and the Office of Telecommunications.

There have been five Assistant Secretaries for Science and Technology since the Office was established. Their terms of office are as follows:

- | | |
|---------------------------|-----------------------------------|
| Dr. J. Herbert Hollomon | - Feb. 16, 1962 to Aug. 31, 1967 |
| Dr. John Kincaid | - Sept. 27, 1967 to Feb. 7, 1969 |
| Dr. Myron Tribus | - March 31, 1969 to Nov. 30, 1970 |
| Dr. James H. Wakelin, Jr. | - March 1, 1971 to Aug. 1, 1972 |
| Dr. Betsy Ancker-Johnson | - April 16, 1973 to present |

BRIEF HISTORICAL BACKGROUND

The post of Deputy Assistant Secretary for Environmental Affairs (DAS/EA) was established in December 1970, to provide the Secretary of Commerce with a focal point for identifying and fulfilling the Department's environmental responsibilities in meeting national environmental goals. The Office of Environmental Affairs (OEA) under the DAS/EA was established in February 1972 by Department Order 10-1 to serve as the Department's center point for implementing the National Environmental Policy Act of 1969 (NEPA), and to support the Assistant Secretary for Science and Technology on environmental quality matters. Under the Assistant Secretary for Science and Technology, OEA is a major point of contact for the Department in the development and implementation of projects for the harmonization of environmental standards under such international programs, such as the US-USSR environmental agreement.

In October 1974, the Secretary directed OEA to initiate a series of studies designed to determine the energy requirements for meeting the combined pollution control requirements within several major energy-intensive industries in the United States. The first study of the iron steel industry was initiated in April, 1975, and the final report was released in March 1976. Studies of the pulp and paper industry and the aluminum industry are expected to be completed in early 1977. Additionally, the study of the petroleum refinery industry is expected to be completed in late 1977.

In April 1976, the Secretary directed the Office to develop a program designed to facilitate the early introduction of environmental considerations in industrial planning. Such early guidance and quality assurance for decisionmakers in the private sector (as well as local, state and the Federal government) is essential in facilitating the preparation of useful environmental assessments. Following consultations with representatives from CEQ, other Federal agencies, non-governmental environmental organizations and industry a study plan for a test demonstration project was designed and a Request for Proposals (RFP) has been issued.

Office of Product Standards

BRIEF HISTORICAL BACKGROUND

The Office of Product Standards (OPS) was originated as the Office of Standards Review under the Assistant Secretary of Commerce for Science and Technology on May 24, 1967. The Secretary, by Department Order dated October 1, 1968, redesignated that office as the Office of Standards Policy and continued it as a constituent operating unit of the Department of Commerce. On July 25, 1969, the Secretary issued a Department Order renaming the office as the Office of Product Standards (OPS), continuing it as a constituent operating unit of the Department of Commerce, and ordering that the Office would be headed by the Director who has the rank and title of Deputy Assistant Secretary for Product Standards and reports to the Assistant Secretary for Science and Technology.

3. HISTORICAL BACKGROUND

"It may be truly said of the Bureau of Standards that its field is the scientific world, and this can be interpreted as widely as the needs of man."

--Department of Commerce Annual Report, 1915

The National Bureau of Standards was established in 1901 in response to concerns that the lack of a Federal measurement standards laboratory was seriously limiting U.S. industrial and commercial growth. The new agency was to provide essential technical aid to American industry, Government, and science by developing, maintaining, and making available the physical standards of measurement. The rapid growth of technology since 1900, continually spawning new needs for measurement, led the Bureau into a variety of technical pursuits; as a result, the laboratory has evolved into a broad national resource. It has acquired competence in many scientific disciplines and is able to undertake important roles in a variety of scientific and technical enterprises.

In its first decade, the Bureau began to bring harmony to measurement practices in commerce through uniform, legal weights and measures. The first NBS director established a National Conference on Weights and Measures in 1907 for officials who would use the Bureau's measurement expertise as a basis for State and local regulations. Today, the Conference continues to develop model laws for adoption by the States as conditions continue to change in the marketplace.

The Bureau has pioneered work in aeronautics, radio, electronics, computers, cryogenics, and in many other technical fields. NBS research has led to improved electrical standards, better standards of length, and new and better standards of time, temperature, and light. More than 50 years ago, the Bureau began a program to broadcast standard frequencies. These broadcasts have made a major contribution to the Nation's space and defense programs, to worldwide navigation, transportation, and communications, and to a multitude of industrial operations.

Metallurgical materials research has been a significant part of NBS activities for 75 years. The need for better analytical measurements, particularly in the burgeoning iron and steel industries, led in 1906 to the Bureau's first standard samples--a group of ores, irons, and steels certified as to chemical composition to aid American steel production and utilization. Today, NBS offers for sale to industry and commerce nearly 1,000 different standard reference materials.

In 1941, NBS experiments became the basis for analyzing impurities in production of uranium oxide. The NBS methods for analyzing impurities in uranium became the standard methods in the Manhattan Project. In 1943, NBS was designated as the central control laboratory for uranium materials.

Many American industries have been strengthened by Bureau contributions. From early tests on construction materials and insulation to studies of the performance of whole buildings and involvement with developers of building codes and standards, NBS has assisted the building industry in achieving quality and economy. During World War I, NBS launched several U.S. industries as an adjunct to its materials research. At one time, the Bureau had nine experimental "factories" producing optical glass, gages, rubber, paper, cement, clay products, alloy metals, cotton, and wool.

Dissemination of information has always been an integral part of Bureau operations--from highly technical research papers to consumer information publications. In 1915, NBS published its first consumer pamphlet, "Measurement for the Household." Currently, the Bureau publishes over 1,500 papers per year. Publishing this information is the principal means the Bureau has to transfer the benefits of its research directly to the people.

For three quarters of a century, NBS has served as a catalyst for the application of advanced technology and associated scientific methods to societal problems. The beneficiaries of the Bureau's work, described in 1900 as manufacturing, commerce, science, government, and education, have also included consumers, architects and builders, medical practitioners, scientific and trade organizations, policymakers, and many other individuals and organizations.

The Bureau's enabling legislation together with additional responsibilities assigned to NBS by more than a dozen additional pieces of legislation, has enabled NBS to bridge the gap between the standards of measurement envisioned by the founding legislators and the demanding standards of performance required by society today.

Following is a brief list of NBS Technical Highlights.

HIGHLIGHTS FROM THE PAST

1904—Development of First Neon Tube—Commercialized and a new industry founded about 1930.

1908—First Postgraduate School in Government Established—Now conducted in cooperation with universities in the Washington area.

1914—Precise Determination of the Faraday—A classical determination of an important physical constant that stood until a recent redetermination at NBS.

1915—Development of Radio Direction Finder—Now in general use by all commercial airlines.

1922—First AC Radio Set—Development of the first alternating current radio set was perhaps the most revolutionary development in radio; put radio in the home.

1920—Measurement of Constant of Gravitation—An historic redetermination of an important constant of nature.

1934—Preparation of Heavy Water—Provided the experimental basis for Urey's Nobel Prize-winning work.

1938—The Electric Hygrometer—Greatly increased the accuracy of measurement of humidity in radio meteorography; now standard for present-day radiosondes.

1941—Radio Proximity (VT) Fuze for Bombs—The proximity fuze was widely used during latter part of World War II and was considered second in importance only to the atomic bomb.

1944—First Successful Guided Missile: the Bat—The only automatic, homing guided missile carried into large-scale production and used in combat during World War II.

1946—Electrodeless Plating of Nickel—Now the basis of multi-million dollar industries.

1946—Printed Circuit Techniques—First used in production of radio proximity fuzes, these techniques are now widely used in the manufacture of electronic assemblies.

1949—The Atomic Clock—The initial NBS developments paved the way for later versions at NBS and elsewhere.

1949—Gyromagnetic Ratio of the Proton—The first direct measurement of an important physical constant, leading to the revision of accepted values for other significant quantities in physics.

1950—SEAC (Standards Eastern Automatic Computer) Dedicated—First automatically sequenced, high speed, electronic digital computer in the United States.

1956—A Bureau experiment first demonstrated that the quantum mechanical law of parity conserva-

tion does not hold in beta decay. This experiment disproved a widely accepted fundamental concept of nuclear physics, thus clearing the way for a reconsideration of existing theories.

1958—The gyromagnetic ratio of the proton was redetermined by measuring the precession rate of protons in a magnetic field. The new value made possible more accurate values of many fundamental constants such as electron charge-to-mass ratio, e/m , the magnetic moment of the proton, and Planck's constant, h .

1962—NBS published the first production line book in which the tables were composed by a photo-composition machine controlled by the output of a digital computer.

1963—The National Standard Reference Data System was established to disseminate critically evaluated data on the physical and chemical properties of materials authoritatively documented as to reliability, accuracy, and source.

1972—Bureau scientists achieved the highest frequency measurement ever made, raising the possibility of replacing the definitions of the units of length and time by a single definition of the speed of light.

1974 — Isotope Separation—Significant enrichment of isotopes of chloride in boron through selective laser excitation was demonstrated.

OFFICE OF TELECOMMUNICATIONS

BRIEF HISTORY

Although OT is only six years old, its roots go back more than half a century. Because of its importance for communication with ships at sea, radio was originally regulated by the Department of Commerce. In 1922, at the suggestion of the Department, the Interdepartment Advisory Committee on Government Radio Broadcasting was created, to advise the Secretary on the management of the radio spectrum. Now called the Interdepartment Radio Advisory Committee (IRAC), it has had many homes since then, but has continued its basic function. Its eighteen agency representatives and one liaison member from the FCC staff now advise the Director of the Office of Telecommunications Policy in the Executive Office of the President. OT's Spectrum Management Support Division provides the Secretariat for IRAC and much of the research and record-keeping for OTP's spectrum managers.

Another part of OT is over 25 years old. During World War II, the Army and Navy founded the Interservice Radio Propagation Laboratory to perform research they both needed on better radio equipment and to make predictions on how well radio waves would carry under various conditions. IRPL became the Central Radio Propagation Laboratory in the National Bureau of Standards, then the Institute for Telecommunications Science and Aeronomy in the Environmental Sciences Services Administration, and finally, the Institute for Telecommunication Sciences in OT. It continues to provide research and technical support for government agencies that do not maintain such expertise themselves.

By the end of the 1960's, it was apparent to Federal officials that the Government's telecommunications administrative structure was not organized so as to permit it to cope adequately with the extraordinary pace of technological change. The response to this realization was Reorganization Plan No. 1 of 1970 and the resultant Executive Order No. 11556, issued that September.

Executive Order No. 11556 not only reinforced the Department of Commerce's place in telecommunication research, but also assigned it new responsibilities in the field. To meet these expanded obligations, the Secretary established the Office of Telecommunications (OT) in September 1970.

In OT, Commerce has a unit that brings coherence and concentration of skills to the Department's telecommunications research -- important because the pace of change in telecommunications technology is still increasing at a breathtaking rate. This technological advance is putting exceptional pressures on manufacturers, users, and government regulators. Government expertise applied to critical points of leverage in the economy could well reduce delays in deriving benefit through private sector innovative applications, and assure that previous investments need not be abandoned in order to accommodate new opportunities.

Additionally, Federal Government agencies are major users of telecommunications equipment and systems; current Federal investment in such equipment is in the neighborhood of \$50 billion. Thus, these agencies are in constant need of expert guidance so that they can use their present plant more effectively and purchase new technologies more wisely.

Finally, the U. S. is well down the road towards the so-called "information society". This is the post-industrial society whose business style -- and, ultimately, whose whole life style -- will be to a great degree determined by the effects of the marriage of the computer to telecommunications.

The impact of this phenomenon ought to be quite literally revolutionary. The first institutions to feel the effects will be those that are "paper-intensive". One example is government. The process of adaptation that these institutions -- and eventually most of society -- will have to make will be eased to the extent that independent experts can, thanks to appropriate research efforts, provide technical and economic advice to those who must implement or regulate these technological reforms.

Patent and Trademark Office

BRIEF HISTORICAL BACKGROUND

The first patent law was enacted in 1790 in accordance with Article 1, Section 8 of the Constitution, which empowers the federal government to "promote the progress. . . of useful arts, by securing for limited times to. . . inventors the exclusive right to their. . . discoveries." The Act of 1836 reestablished the examination system of granting patents and established the Patent and Trademark Office as a separate agency. The Act of 1870 gave jurisdiction to the Office to register trademarks.

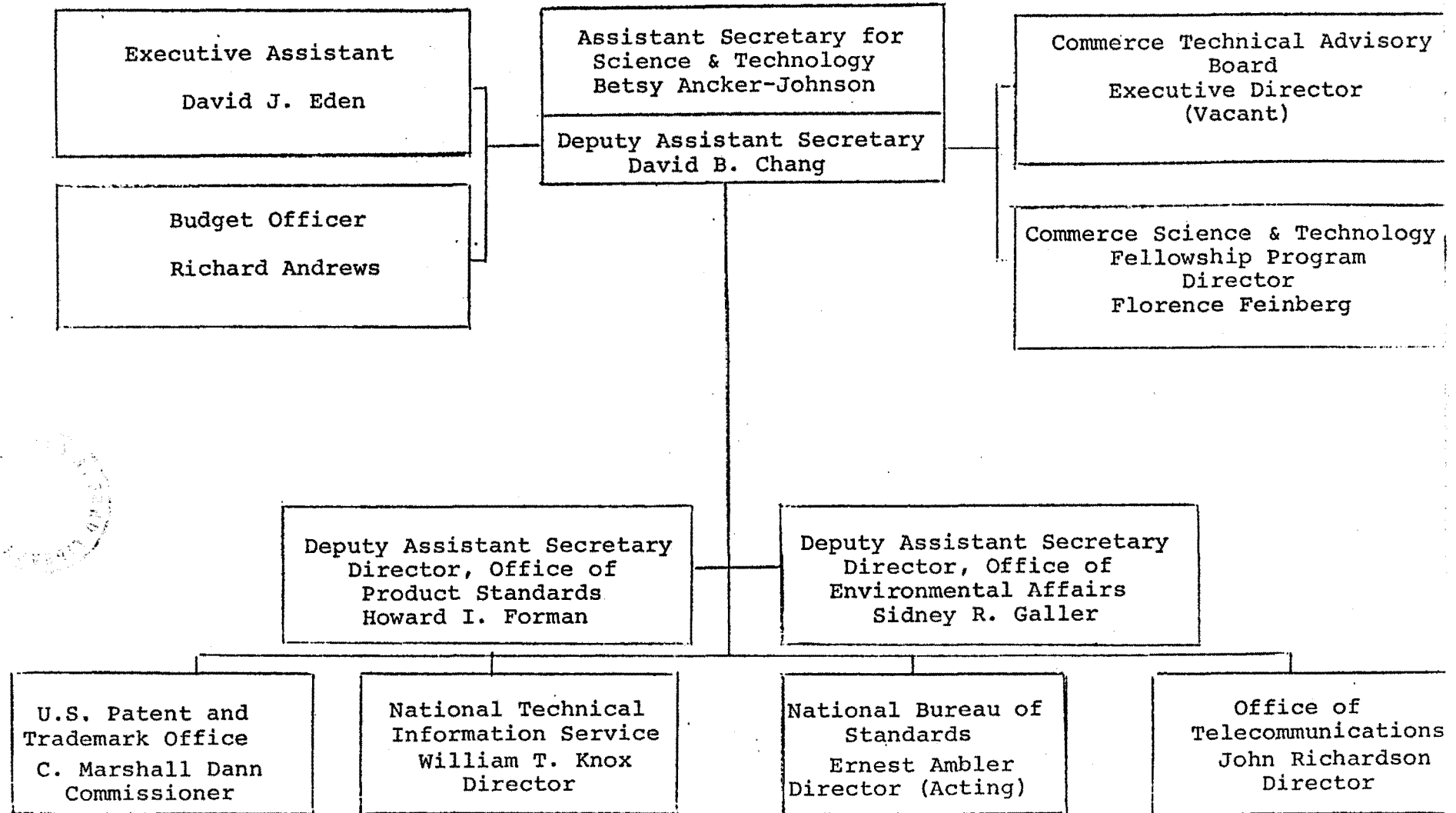
The dissemination of patents and related materials began in the early 1870's with the printing of patents for distribution and sales and the issuance of weekly Official Gazettes. In 1898 Congress authorized the establishment of a Classification Division to reclassify the search files to permit greater ease in determining the novelty of inventions.

In 1925 the Patent and Trademark Office became an agency of the Department of Commerce. The Lanham Act concerning trademarks was enacted in 1946 and in 1952 the patent laws were revised and codified.

Internationally, the United States became a member of the International Convention for the Protection of Industrial Property in 1887, thereby protecting the patent and trademark rights of United States' citizens in foreign countries and offering reciprocal rights to foreign citizens. In 1975 the United States became the first country of major filing activity to ratify the Patent Cooperation Treaty. The Office is currently active in efforts to secure ratification of the Trademark Registration Treaty.

Assistant Secretary for Science and Technology

ORGANIZATION



W. R. Galler

OFFICE OF ENVIRONMENTAL AFFAIRS

OFFICE OF THE ASSISTANT SECRETARY FOR SCIENCE AND TECHNOLOGY

Dr. Sidney R. Galler
Deputy Assistant Secretary for
Environmental Affairs
and
Director, Office of Environmental Affairs

Jane Lewis
Assistant Director
Office of Environmental Affairs

Professional Staff:

Fred Stein, Assistant Director for Environmental Impact
Assessment, Land Use
Dr. George S. Gordon, Air Pollution, Noise Pollution
Dr. Bernard Greifer, Air Pollution, Noise Pollution
John L. Sullivan, Resource Recovery, Solid Waste Manage-
ment, Wilderness Proposals
Robert B. Grant, Energy, International Environmental
Affairs
Edward J. Wilczynski, Energy, International Environmental
Affairs
Richard J. Herbst, Energy, International Environmental
Affairs
Bruce R. Barrett, Water Pollution
Marvin Rubin, Water Pollution
Fred Whitcraft, Water Pollution
Dr. William V. Hartwell, Toxic Substances, Pesticides
John B. Cox, Toxic Substances, Pesticides
Steven E. Ransdell, Attorney

Budget: \$0.8M

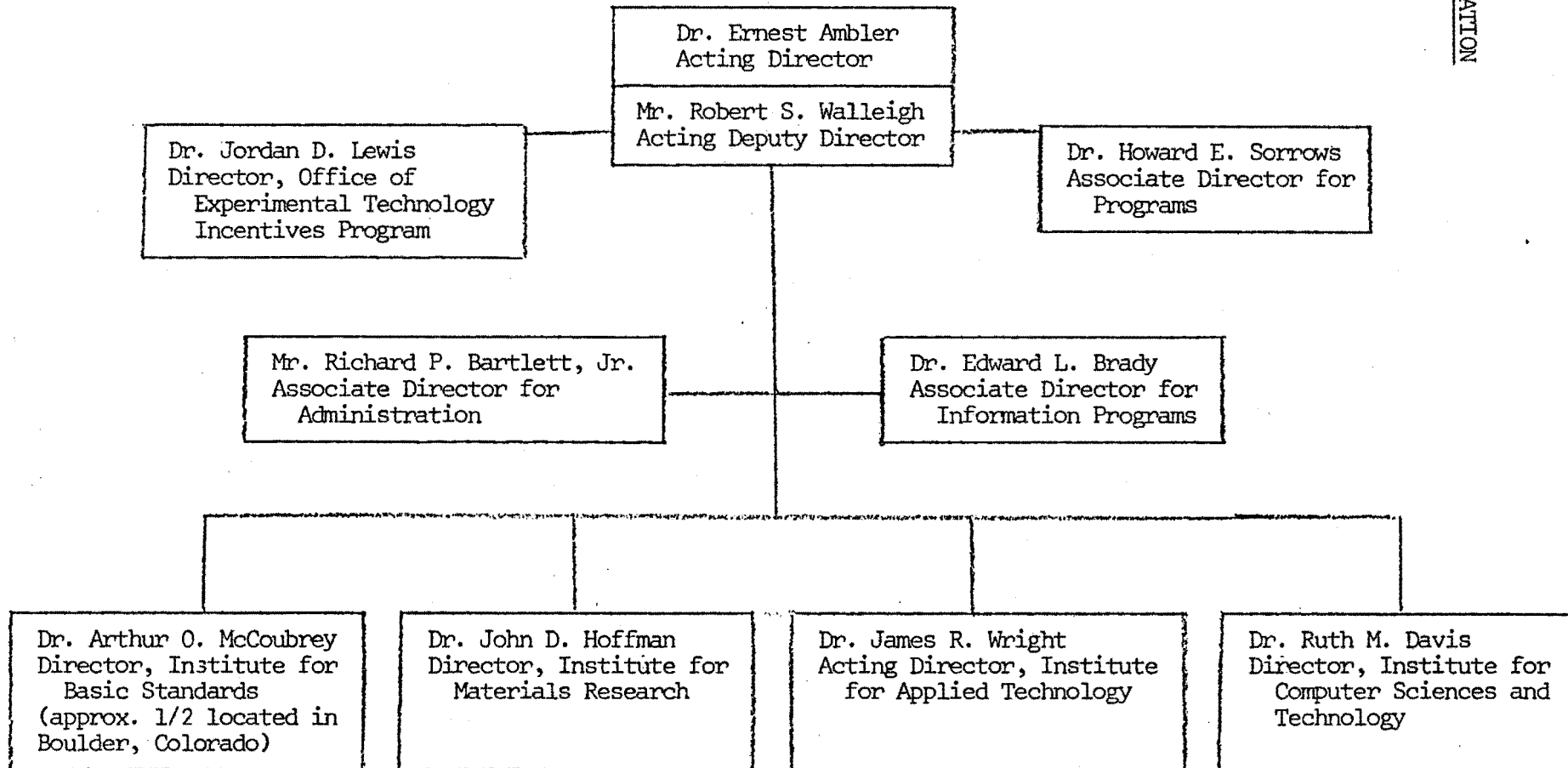
Full-time Permanent and Temporary Personnel: 22

Office of Product Standards

ORGANIZATION

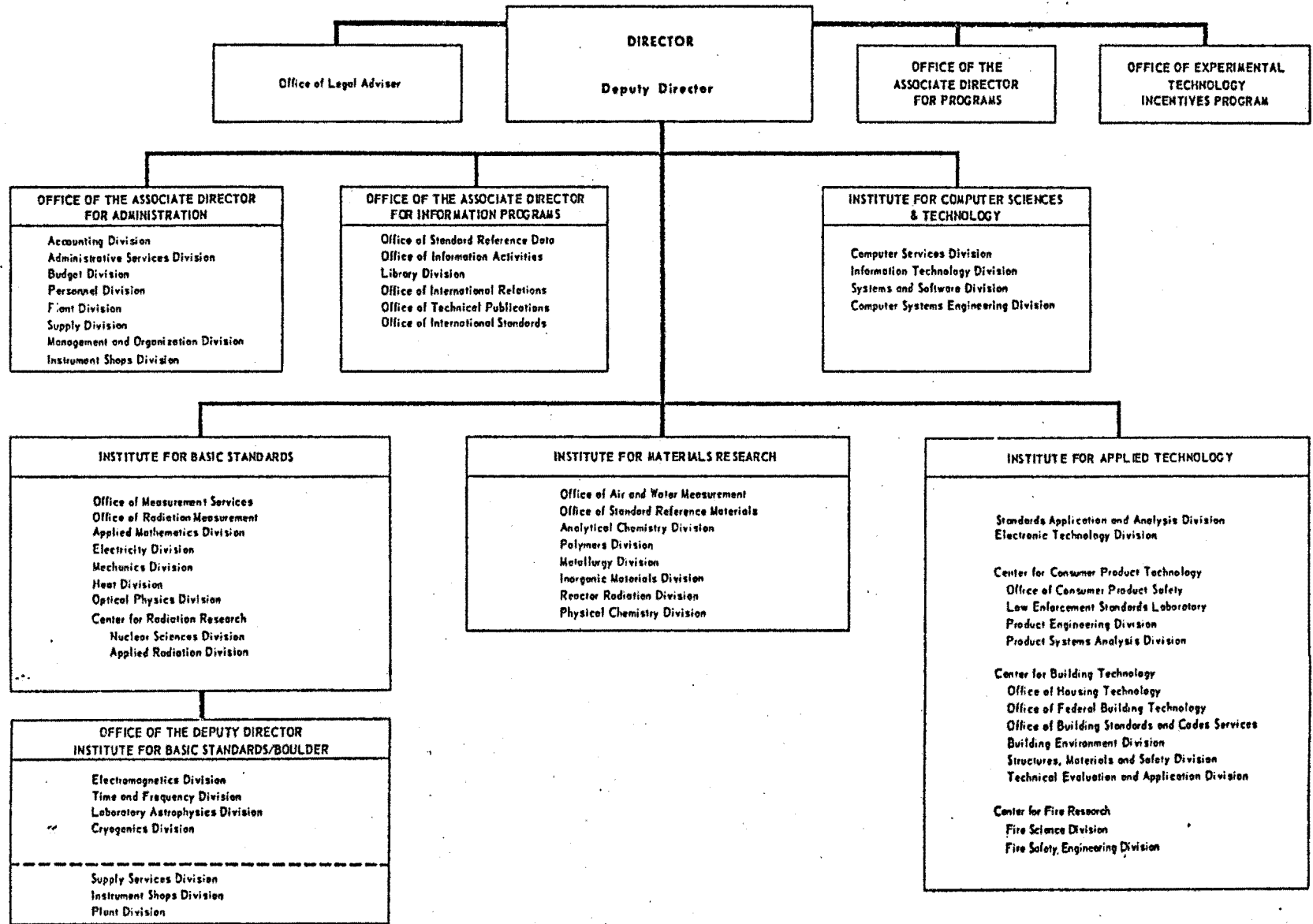
In addition to the Director, the Office has one other professional whose designation is Assistant Director for Policy and Operations, and two secretaries.

National Bureau of Standards

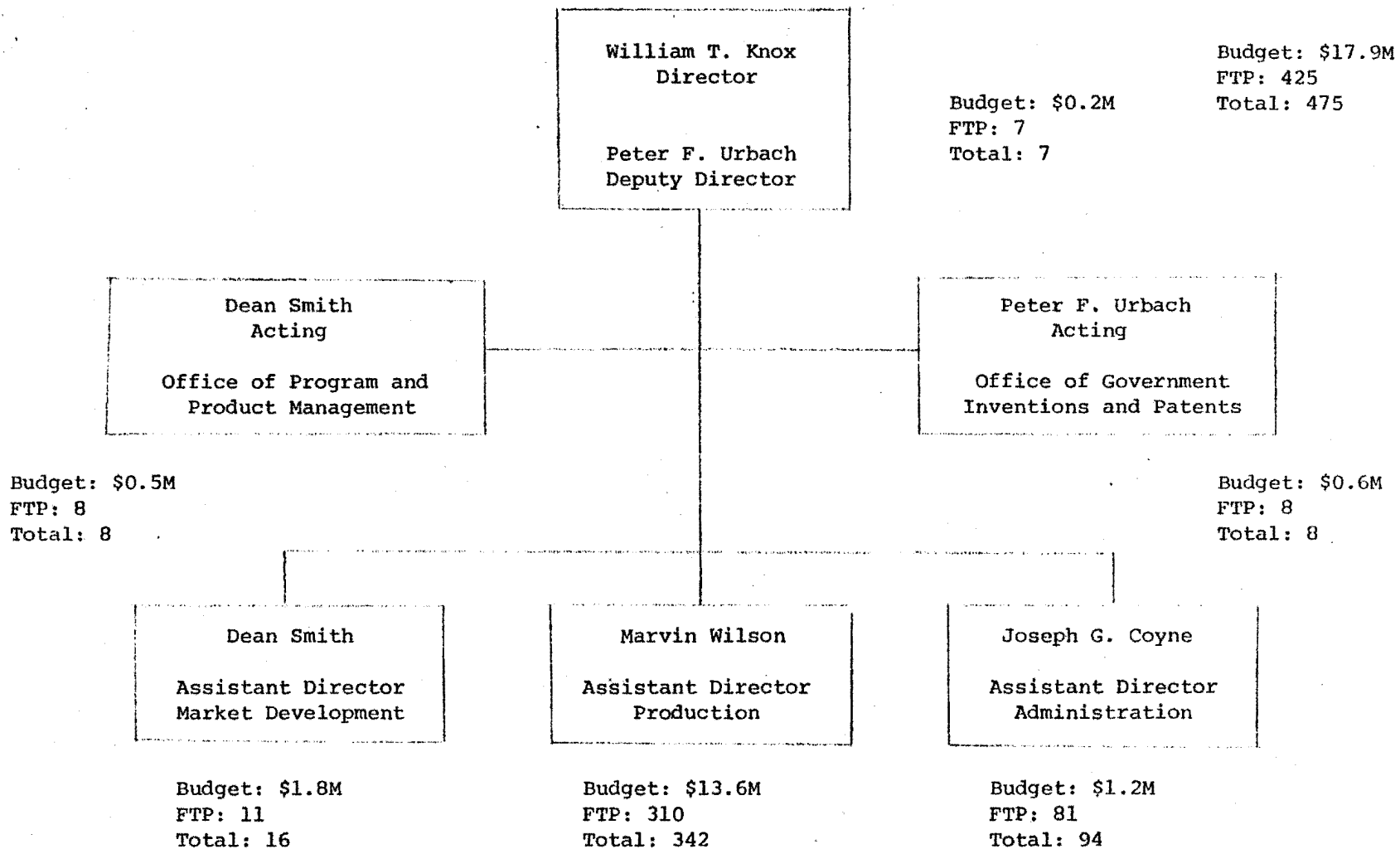


U.S. DEPARTMENT OF COMMERCE

National Bureau of Standards



NATIONAL TECHNICAL INFORMATION SERVICE
FY 1978 OMB Submission



OFFICE OF TELECOMMUNICATIONS

ORGANIZATION

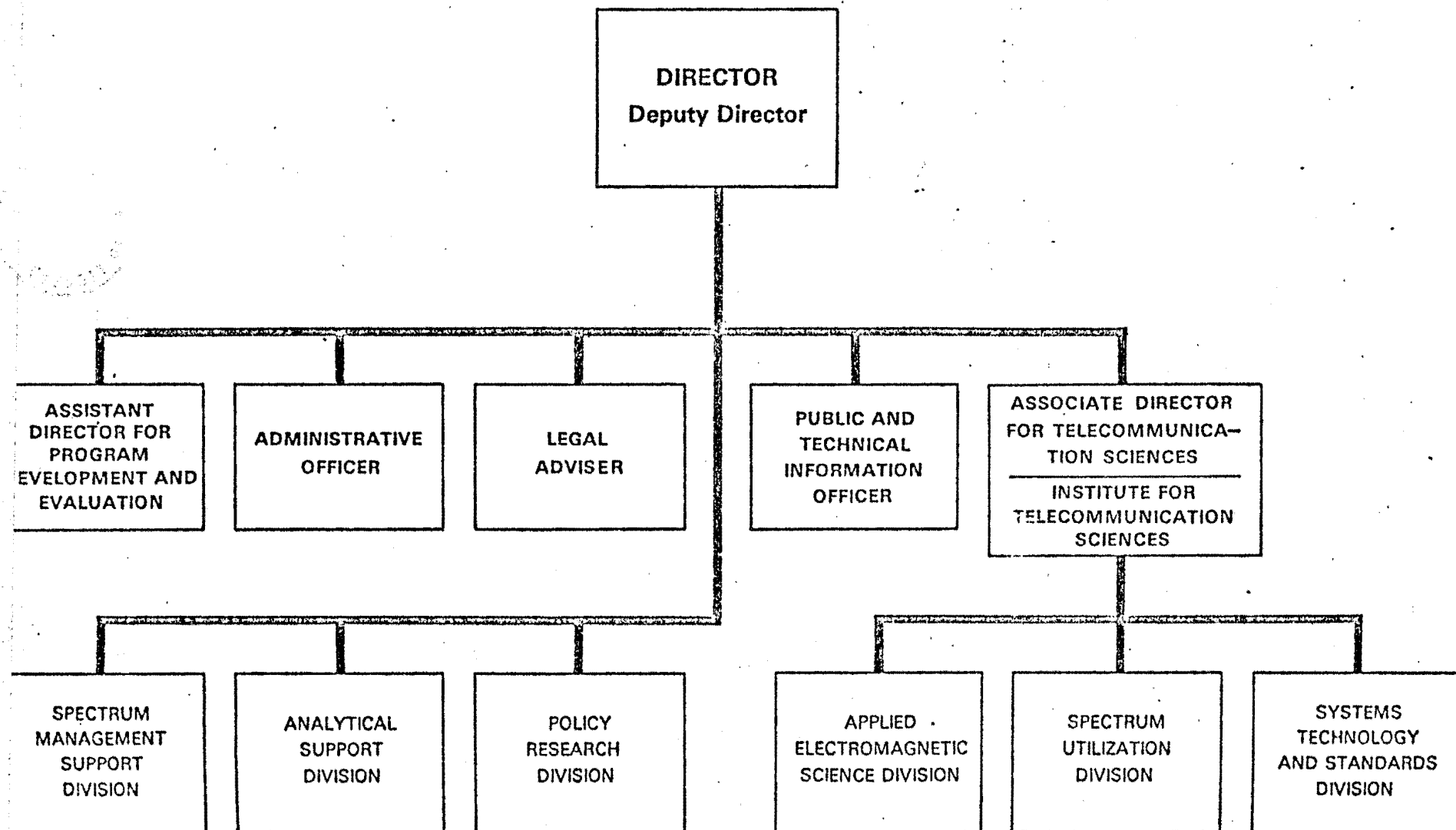
OT's organization is depicted in Figure 1. The functions of the various units are as follows:

- ☒ The Directorate, responsible for the direction and administration of OT, includes: the Office of the Director, the Legal Advisor, the Public and Technical Information Officer, and their staffs.
- ☒ The Assistant Director for Program Development and Evaluation, together with his staff, is responsible for initiating and maintaining the agency's program planning and review processes.
- ☒ The Administrative Office is responsible for administrative management and support functions, including: accounting, procurement, personnel services, office services, and office management. The first three groups are located at 1325 G Street, N. W., in Washington, D. C.
- ☒ The Institute for Telecommunication Sciences performs research, engineering and analysis in the telecommunication sciences responsive to the needs of government in radio propagation, spectrum utilization, and system performance, specification and evaluation. ITS frequently serves as the technical interface between the telecommunications industry and Federal mission agencies. ITS is located in Boulder, Colorado.
- ☒ The Spectrum Management Support Division (SMSD) provides technical, administrative and analytical support to the Office of Telecommunications Policy (OTP), which is responsible for the management of the Federal Government's share of the radio spectrum. SMSD also provides the Secretariat for the Interdepartment Radio Advisory Committee (IRAC), an advisory body to OTP, made up of those principal agencies which use the radio spectrum. SMSD has principal offices in Washington, with additional facilities in Annapolis and Frostburg, MD.
- ☒ The Policy Research Division (PRD) does indepth interdisciplinary research and analysis to aid the development of telecommunications policy. It does most of its work for OTP. It also is supporting the Department of Justice. PRD is located in Boulder.

- The Analytical Support Division (ASD) does research on international telecommunications and on the Government's own use of telecommunications systems for OTP. ASD is located in Washington, D. C.

U.S. DEPARTMENT OF COMMERCE

Office of Telecommunications



Patent and Trademark Office

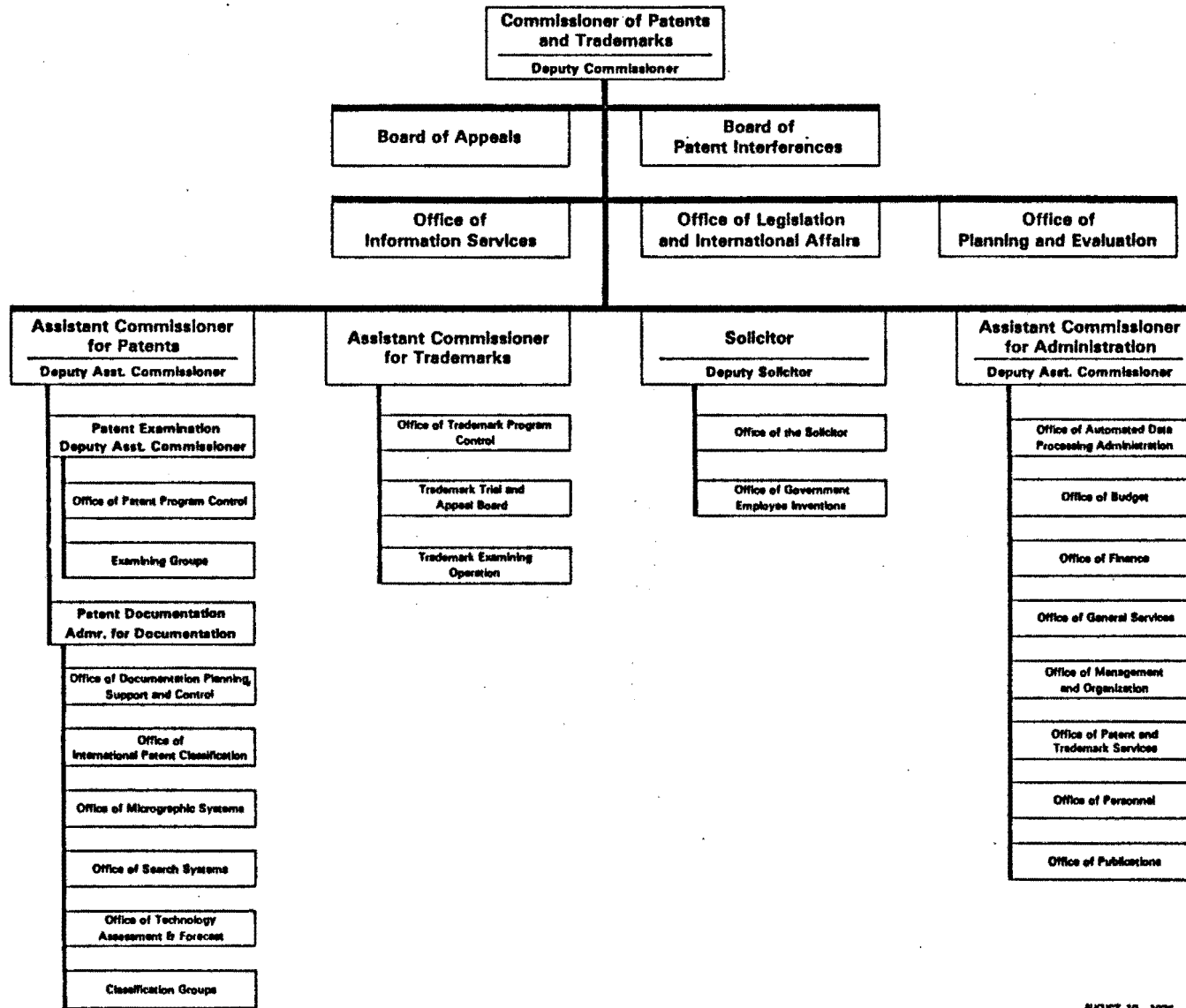
ORGANIZATION

The Patent and Trademark Office is an organization having no field offices. It is located in Crystal City, Arlington, Virginia.

An organization chart follows.

**U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Attachment to DOO 30-38



AUGUST 19, 1976

8-3-76

BETSY ANCKER-JOHNSON

PRESENT POSITION:

Assistant Secretary for Science and Technology, U.S. Department of Commerce, Washington, D.C. 20230, (202-377-3111), sworn in on April 16, 1973. Responsible for managing 6 organizations with a total of 7500 employees and an annual budget of 230 million dollars.

EDUCATION:

B.A. Physics, Wellesley College, 1949 (with High Honors)
Ph.D. Physics, Tuebingen University, Germany, 1953 (Magna cum Laude)

SPECIALIZATIONS:

Administration:

Large Laboratories and other Science and Technology Organizations in U.S. Government.

Industrial Research and Development

Science and Technology Applied to Societal Needs:

Technology Assessment

Design and Operation of Complex Social-Technical Systems

Physics:

Plasmas in Solids

Controlled Thermonuclear Fusion

Semiconductor Physics: transport properties; nonequilibrium effects; impact ionization; injection; multi-photon processes

Ferrimagnetism and Nonreciprocal Effects

X-Ray Studies of Imperfections in Nearly Perfect Crystals

Electrical Engineering:

Fast Risetime Circuitry

Sampling Systems

Microwave and Molecular Electronics

PRIOR EXPERIENCE:

Executive Management: The Boeing Company:

1972-1973 Manager, Task Force on Institute for World Needs

1972-1973 Academic/Science Advisor to Research and Engineering Division

1971-1972 Manager, Advanced Energy Systems, Aerospace Company

1970-1971 Supervisor, Electronic Sciences, Boeing Scientific Research Laboratories

Teaching:

1967- Affiliate Professor, Electrical Engineering, University of Washington, Seattle

1964-1967 Research Associate Professor, Electrical Engineering, University of Washington

1954-1956 Staff Member, Inter-Varsity Christian Fellowship

1953-1954 Lecturer in Physics, University of California, Berkeley

Research:

- 1961-1970 Research Specialist, Boeing Scientific Research Labs.
- 1967-1968 Visiting Scientist, Bell Telephone Laboratories, Murray Hill, N.J.
- 1958-1961 Member Technical Staff, RCA David Sarnoff Labs.
- 1956-1958 Senior Physicist, Sylvania Microwave Physics Laboratory, General Telephone and Electronics Corp.
- 1953-1954 Junior Research Physicist, University of California, Berkeley.

PROFESSIONAL AFFILIATIONS:

- Member - National Academy of Engineering
- Fellow - American Association for the Advancement of Science
- American Physical Society
- Institute of Electrical and Electronic Engineers

PROFESSIONAL ACTIVITIES:

- Author of over 80 scientific papers
- Holder of several patents and pending patents
- Referee for Physical Review Letters, Physical Review, Applied Physics Letters, J. Applied Physics, Proc. IEEE, Electron Device Transactions, National Science Foundation, National Research Council
- Contributed papers to International Conference on Physics of Semiconductors, Exeter (England) 1962, Paris 1964, Kyoto 1966, Moscow 1968.
- Invited Speaker, International Symposium on Plasmas in Solids, Paris, 1964.
- Chairman, first Gordon Research Conference on Plasma Physics, 1966.
- Visiting Staff Member, Bell Telephone Laboratories, Murray Hill, New Jersey, 1967-1968.
- Invited Speaker International Conference on Physics of Semiconductors Moscow, 1968.
- U.S. Government Delegate to International Atomic Energy Agency Conference on Controlled Thermonuclear Fusion and Plasma Physics, Novosibirsk, U.S.S.R., 1968; Tokyo, 1974
- Member of the Advisory Committee on U.S.S.R. and Eastern Europe of the Office of the Foreign Secretary, National Academy of Sciences, 1970-1973.
- American Physical Society, Committee on Women in Physics 1970-1971; Counselor-at-large 1971-1976, Executive Committee 1972-1974, Committee on Minorities 1972-1975.
- Regional Panelist, President's Commission on White House Fellows, 1972-1973.
- Member, President's National Advisory Committee on Oceans and the Atmosphere, 1972-1973.
- Member, Stanford University School of Engineering Advisory Council, 1974-

PROFESSIONAL ACTIVITIES CONTINUED

Member, Massachusetts Institute of Technology Corporation
Visiting Committee for Sponsored Research, 1975-
The Institute of Electrical and Electronic Engineers, Intersociety
Relations Committee 1976-, Eascon Board of Directors 1976-.
Member, Federal Council for Science and Technology, 1973-
Chairman, Government Patent Policy Committee, 1973-
Member, US/USSR Commission on Science and Technology, 1973-
Member, US/USSR Committee on Energy, 1975-
Member, US/Japan Commission on Energy, 1975-
Member, Defense Science Board Task Force on Export of U.S.
Technology, 1974-
Chairman, Commerce Technical Advisory Board, 1974-
Member Nominating Committee, American Association for the
Advancement of Science, Section on Physics, 1974-1977.
Member, Board of Governors, US/Israel Industrial R&D Foundation,
1976-
Head U.S. Delegation on USSR Patent Management and Licensing, 1973
and on Eastern Europe, 1976
Member, Federal Aviation Administration Technical Advisory
Committee 1976-.
National Academy of Engineering, Nominating Committee 1975-1976,
Finance Committee 1976-.
Member, Finance Committee of the National Academy of Engineering
Foundation 1976-.

HONORS:

B.A. with High Honors, Pendleton Scholarship; Ph.D. Magna cum
Laude; American Association of University Women Fellowship;
Horton Hollowell Fellowship; Phi Beta Kappa; Sigma Xi; Recipient
of three National Science Foundation Grants; Performance Excellence
Award, R & E Division of the Boeing Co.; Trustee of Wellesley
College, 1970-; Alpheus Smith Memorial Lecturer, the Ohio State
University (Lecture published in The Physics Teacher); Invited
speaker at Conference on Successful Women in the Sciences, New
York Academy of Science, 1972 (Talk published in ANNALS); Invited
keynoter, International Licensing Executive Society International
Meeting, Tokyo, 1975; Award of Honor, Licensing Executives Society,
1976; Invited Keynoter, Second Mid-America Metric Conference, 1976.

PERSONAL:

Born 4/27/29 in St. Louis, Missouri
Married to Professor Harold H. Johnson in 1958, four children.

BIOGRAPHY

DAVID BING JUE CHANG
Deputy Assistant Secretary of Commerce
for Science and Technology

Dr. David B. Chang was appointed Deputy Assistant Secretary for Science and Technology, U.S. Department of Commerce, on July 10, 1973.

Dr. Chang is a theoretical physicist with extensive experience in industrial and university research in a variety of subjects ranging from molecular physics to astrophysics.

He received a B.S. degree in engineering physics from the University of Washington in 1956, and a Ph.D. in physics from the California Institute of Technology in 1962.

From 1961 to 1963 he was a postdoctoral fellow in plasma physics at the University of California, San Diego. He worked in planetary space physics as a staff member of the General Atomic Company from 1963 to 1966. He was a Public Health Service Senior Fellow in physiology and biophysics at the University of Washington from 1966 to 1968. From 1968 until he joined the Department of Commerce in 1973, he was concurrently a Staff Member of the Boeing Company in Seattle, an Affiliate Associate Professor in the Department of Physiology and Biophysics of the University of Washington School of Medicine, and an Affiliate Investigator at the Institute of Respiratory Physiology of the Virginia Mason Research Center.

Dr. Chang is author or co-author of more than three dozen scientific papers in such fields as fusion plasma instabilities, Van Allen belt particles, planetary radio emission, wave interactions, and semiconductors. More recently he has been interested in molecular biophysics, biological membranes, toxicology studies using lasers and magnetic resonance, and respiration physiology.

Dr. Chang has been elected to several honorary societies, has held a number of fellowships and belongs to the American Physical Society and the American Association for the Advancement of Science.

In his present position as Deputy Assistant Secretary of Commerce for Science and Technology, Dr. Chang presides as second-in-command over the 7,500 employees and \$160 million budget of the Patent and Trademark Office, National Bureau of Standards, National Technical Information Service, Office of Telecommunications, Office of Environmental Affairs, and the Office of Product Standards. In addition to his administrative duties, he has specialized in the coordination of energy programs and in the international work of his office. He has participated in technical and trade missions to the Far East. He was chairman of the interagency task force responsible for recommending the \$100 million program for accelerating energy research in 1973, and is presently the U.S. chairman of the Joint U.S.-Israel Subcommittee on Industrial R&D.

Dr. and Mrs. Chang and their four children live in McLean, Virginia.

Biographical Data

SIDNEY R. GALLER

Dr. Sidney R. Galler was born in Baltimore, Maryland on November 9, 1922, and graduated from Baltimore City College in 1940. He received his B.S. in 1945, his M.S. in 1947, and a Ph.D. in hydrobiology in 1948 from the University of Maryland. During World War II, he served in the U.S. Army.

The Secretary of Commerce, on January 4, 1971, appointed Dr. Galler to the newly established post of Deputy Assistant Secretary for Environmental Affairs in the Office of the Assistant Secretary for Science and Technology. The Department of Commerce has a broad range of environmental activities and Dr. Galler is responsible for developing, coordinating, and evaluating the Department's environmental affairs.

Formerly, Dr. Galler was Assistant Secretary (Science) of the Smithsonian Institution (from 1965-1971) and, prior to that time, served as the Head of the Biology Branch of the Office of Naval Research (from 1950-1965).

During his professional career, Dr. Galler has been instrumental in developing a number of scientific research programs and activities of national and international significance.

He established the U.S. Navy Hydrobiological Research Program, which served as a foundation for the later development of U.S. national research programs in biological oceanography.

Also, he developed the first U.S. program of animal orientation research which has contributed to improved high altitude aircraft operations and manned space flight. His pioneering work in bio-instrumentation led to the development of the first U.S. satellite biological experiment launched from Cape Kennedy on February 4, 1958. Dr. Galler's bio-instrumentation concepts led to the development of a series of radio telemetric devices which are being used to monitor the movements of wildlife for scientific research

and management. His bio-instrumentation concepts led also to the development of the first experimental underwater audio-video observatory, a remote-controlled system of underwater television cameras and acoustic devices for testing under field conditions the effects of various chemical and physical stresses on the behavior of sharks, fishes and other marine organisms hazardous to man.

Dr. Galler initiated the development of a series of underwater collecting devices operating from submarines to obtain specimens of marine organisms from the ocean depths. These devices have provided a means for verifying theoretical calculations of primary productivity in the oceans. Among his efforts to improve marine field measurement instrumentation, Dr. Galler developed the Research Ships of Opportunity plan for instrumenting commercial freighters and passenger ships to collect marine specimens and to monitor the oceanic environment. Among his inventions is an apparatus for simulating the temperatures of heated effluent waters from power plants in order to measure their effects on aquatic animals and plants under actual field conditions. Also, he invented equipment to control marine fouling growth by means of elevated temperatures.

During Dr. Galler's service with the Smithsonian Institution, he initiated the Smithsonian Center for Short-Lived Phenomena--the first international early warning system for scientists to facilitate early investigation of major natural catastrophes, e.g. earthquakes, volcanic eruptions, pest infestations, etc. Also, he helped develop the Smithsonian Center for Environmental Studies, a research facility for discovering scientific solutions to environmental problems such as the protection of watersheds in areas of rapid industrial and residential development.

Dr. Galler's achievements have received national and international recognition. Among his many awards are the Navy Civilian Service Award, several Outstanding Performance Awards and the Navy Distinguished Civilian Service Award. This award is the highest civilian award of the U.S. Navy. His contributions to NASA's Apollo program led to a Special Achievement Award from NASA in 1971. For his role in advancing international scientific collaboration, he has received letters of commendations from the Secretaries of the Navies of Mexico, Argentina, Chile, Peru, and

Brazil. For his many contributions to the scientific programs of the Smithsonian Institution, Dr. Galler was conferred the Smithsonian Exceptional Service Award, the highest staff citation awarded by the Smithsonian. In March 1975, Dr. Galler was conferred a Special Achievement Award by the Secretary of Commerce.

The author of numerous scientific and technical publications, Dr. Galler is a member of the American Society of Limnology and Oceanography, Society of Sigma Xi, Research Society of America, and the American Institute of Biological Sciences. He is a Fellow of the American Association for the Advancement of Science, a Founder member of the Marine Technical Society, and a Fellow of the Washington Academy of Sciences. Dr. Galler is a member of the Cosmos Club. He is listed in American Men of Science and Who's Who in America.

Dr. Galler is married to Adela Victoria Galler (the former Adela Victoria Rudel Von Hornus) and has four children.

Office of Product Standards

BIOGRAPHY OF PRINCIPAL OFFICIAL

Howard I. Forman, serves as Director of the Office of Product Standards and Deputy Assistant Secretary for Product Standards. He holds degrees of B.S. (Chemistry), St. Joseph's College, 1937; LL.B., Temple University, 1944; M.A. (Public Administration) 1947 and Ph.D. (Business Administration) 1955, both from Wharton School of University of Pennsylvania. He is a member of the Bars of the District of Columbia and Pennsylvania. He served as Research Chemist, Patent Counsel and Assistant Director of Research at Frankford Arsenal, Department of the Army, 1940-1956. From 1950 to 1955 he also served as Consultant to Dr. Archie M. Palmer, appointed by President Truman to be the first chairman of the Government Patents Board established by Executive Order 10096. From 1956 to May 1976 he served as Patent and Trademark Counsel, and International Corporate Attorney for Rohm and Haas Company, Philadelphia, including service as Corporate Secretary and Director of several Rohm and Haas foreign subsidiaries. He also served as instructor in undergraduate and graduate courses on "Federal Administrative Process" at Temple University's Evening College of Business Administration and College of Liberal Arts, 1956-1961, as an Advisor to Howard Samuels, Assistant Secretary of State for Economic Affairs, 1968-1971, and as the head of local and national patent bar associations. He is the author and/or editor of four textbooks and the author of over 40 articles published in domestic and international legal, business and professional journals.

5. BIOGRAPHIES OF PRINCIPAL OFFICIALS

Director (Acting)

Dr. Ernest Ambler; Yorkshire, England, 1923; B.A., M.A., Ph.D., (physics) Oxford, 1953; NBS, 1953: Chief, Cryogenic Physics Section; Chief, Inorganic Materials Division; Director, Institute for Basic Standards; Deputy Director, NBS, 1973; Director (Acting), 1975.

Deputy Director (Acting)

Mr. Robert S. Walleigh; Washington, D.C., 1915; B.S., George Washington University, 1936; NBS, 1943: Associate Director for Administration, 1955; Deputy Director (Acting), 1975.

Associate Director for Programs

Dr. Howard E. Sorrows; Hewitt, Texas, 1918; B.A., 1940, Baylor; M.A., 1947, George Washington University; Ph.D., 1958, Catholic University; NBS, 1944-1950; 1959-1965, Manager, Texas Instruments; Deputy Director, Institute for Materials Research, 1965, NBS; Acting Director, Institute for Applied Technology, 1969-1970; Associate Director for Programs, 1970.

Director, Institute for Basic Standards

Dr. Arthur O. McCoubrey; Regina, Saskatchewan, 1920; B.S., California Institute of Technology, 1943; Ph.D. (physics), Pittsburgh, 1953; Varian, 1960-1972, Director of Central Research; Frequency and Time Systems, Inc., Vice President and Director, 1972-1974; NBS: Director, Institute for Basic Standards, 1974.

Director, Institute for Materials Research

Dr. John D. Hoffman; Washington, D.C., 1922; B.S., Franklin and Marshall, 1942; M.S., 1948; Ph.D., 1949, Princeton; General Electric Company, Research Chemist, 1949-1954; NBS: 1954, Chief, Polymer Structures Section; Chief, Dielectric Section; Director, Institute for Materials Research, 1968.

Director (Acting), Institute for Applied Technology

Dr. James R. Wright; Shawsville, Maryland, 1922; B.S., 1946, Salisbury State College; B.S., 1948, Washington College; M.S., Ph.D. (organic chemistry) University of Delaware, 1951; Southwest Research Institute, 1951-1952; California Research Corporation, 1952-1960; NBS: 1960, Chief, Building Research Division; Director, Center for Building Technology; Deputy Director, Institute for Applied Technology (IAT); Acting Director, IAT, 1976.

Director, Institute for Computer Sciences and Technology

Dr. Ruth M. Davis; Sharpsville, Pennsylvania, 1928; B.A., 1950, American University; M.A., 1952; Ph.D., 1955, University of Maryland; National Library of Medicine, Associate Director for Research and Development; NBS: Director, Institute for Computer Sciences and Technology, 1968.

Associate Director for Information Programs

Dr. Edward L. Brady; Charleston, South Carolina, 1919; B.A., 1940, UCLA; M.A., 1943; Ph.D., 1948, Massachusetts Institute of Technology; NBS: 1963-1969, Chief, Standard Reference Data; Associate Director for Information Programs, 1969.

Associate Director for Administration

Mr. Richard P. Bartlett, Jr.; Grafton, West Virginia, 1926; B.S., 1951, West Virginia Wesleyan; M.S., 1952, Virginia Polytechnic Institute; NBS: Associate Director for Administration, 1975.

BIOGRAPHICAL SKETCH

JOHN M. RICHARDSON
Director
Office of Telecommunications

John M. Richardson has been the Director of the Office of Telecommunications since June 6, 1976. He served as Acting Director of the Office from June 25, 1972, until he was named Director. He had previously served as the Office's Deputy Director from the date of its creation.

His prior employment includes service as Executive Secretary of the Committee on Telecommunications of the National Academy of Engineering while that committee performed studies for President Johnson's Task Force on Communications Policy in 1968-69. At the National Bureau of Standards, Boulder, Colorado, he served as Deputy Director for Radio Standards of the Institute for Basic Standards from 1962 to 1967.

He also served on the Staff of the Assistant Secretary of Commerce for Science and Technology and, in this capacity, was instrumental in the establishment of the Office of Telecommunications in 1970.

Dr. Richardson, who has published numerous papers on technical specialties and on more general aspects of communications technology, received the Department of Commerce Gold Medal Award for Exceptional Service in 1964. He has frequently represented the United States at the Organisation for Economic Cooperation and Development.

Dr. Richardson received his B.A. degree from the University of Colorado in 1942 and the M.A. and Ph.D. degrees in physics from Harvard University in 1947 and 1951, respectively. In 1966-67, he returned to Harvard, this time to spend a sabbatical year at the Kennedy School of Government.

November 1976

STANLEY I. COHN
ACTING DEPUTY DIRECTOR
OFFICE OF TELECOMMUNICATIONS

Stanley I. Cohn is currently serving as Acting Deputy Director of OT. He is Chief of the Office's Spectrum Management Support Division, which provides administrative support and technical analyses to the Office of Telecommunications Policy. He is also currently serving as Acting Chief of the Analytical Support Division of OT. Mr. Cohn has been with OT since 1971.

Prior to joining OT, he was affiliated for 19 years with the IIT Research Institute, ultimately heading its East Coast operations of more than 300 personnel engaged in scientific research. Mr. Cohn was also Director of Technical Operations at the Electromagnetic Compatibility Analysis Center of the Department of Defense for six years. He has gained considerable experience in the fields of radio propagation, communications, and radar systems.

Mr. Cohn has authored many papers and scientific reports in interdisciplinary fields, in electronics, and in electromagnetic compatibility. He has chaired and participated in many professional conferences and symposia.

He holds B.S. and M.S. degrees in Electrical Engineering from the Illinois Institute of Technology.

DOUGLASS D. CROMBIE
ASSOCIATE DIRECTOR FOR TELECOMMUNICATION SCIENCES, OT
AND
DIRECTOR, INSTITUTE FOR TELECOMMUNICATION SCIENCES
BOULDER, COLORADO

Douglass D. Crombie assumed his present post as ITS Director in October 1971. He joined the professional staff of what is now the Institute in 1962, working with problems of radio wave propagation. He served as Acting Deputy Director, OT, from February to June of 1976.

From 1950 until February 1962, Mr. Crombie, a U.S. citizen who is a native of New Zealand, was with the Dominion Physical Laboratory of the New Zealand Department of Scientific and Industrial Research, where he was Head of the Radio Physics Division.

In 1958-59, he was a New Zealand National Research Fellow at the Cavendish Laboratory in Cambridge, England. There, he engaged in Very Low Frequency propagation research.

Mr. Crombie received the U.S. Department of Commerce Gold Medal Award for Exceptional Service in 1970. He has to his credit many published papers in British and American scientific journals.

Mr. Crombie received his B.S. and M.S. degrees from Otago University, New Zealand, in 1947 and 1949, respectively.

KENNETH F. GORDON
ACTING ASSISTANT DIRECTOR FOR
PROGRAM DEVELOPMENT AND EVALUATION
OFFICE OF TELECOMMUNICATIONS

Kenneth F. Gordon assumed his present post in May 1976. He joined OT in January 1976, serving for five months as Special Assistant to the Director. From July until December 1976, he served as Special Assistant to the Under Secretary.

Before joining OT, Dr. Gordon was Vice President of RMC Research. Before that, he was on the professional staff of the Center for Advanced Studies (TEMPO) of the General Electric Company. He has also had engineering and planning responsibilities with the Xerox Corporation and General Dynamics/Electronics.

In addition, Dr. Gordon was on the faculty of the College of Business Administration at the University of Rochester, both as a teacher and as Assistant Dean of the College.

He has organized and chaired several symposia and seminars in such fields as technology and economic growth. He coedited the book, Assessing the Future and Policy Planning, and has authored several articles on related subjects.

Dr. Gordon's undergraduate training was in electrical engineering (BSEE, 1956, Cornell), and he has done further work in industrial management (M.S., 1960, M.I.T.) and in economics (M.A., 1964, Ph.D., 1967, University of Rochester).

ROGER K. SALAMAN
CHIEF, POLICY RESEARCH DIVISION
INSTITUTE FOR TELECOMMUNICATION SCIENCES
BOULDER, COLORADO

Roger K. Salaman was a Commerce Science Fellow from 1970-71. Since August 1971, his work has involved opportunities in telecommunications concerning policy formulation.

Prior to joining OT, Mr. Salaman was with CRPL, Boulder, Colorado, where he received an award for contributions to a DASA nuclear handbook and for developing a short-term HF forecasting program. Other experience was with DECO Electronics, Inc., where he helped determine the performance of VLF thru HF communications systems and was Assistant Director for technical planning and coordination. He has also served as Program Editor for the IEEE International Conference on Communications.

Mr. Salaman received his BSEE from Rennselaer Polytechnic Institute in 1955 and his MSEE from the Polytechnic Institute of Brooklyn in 1956.

CLOYD C. DODSON
ADMINISTRATIVE OFFICER
OFFICE OF TELECOMMUNICATIONS

Cloyd C. Dodson assumed his present position of Administrative Officer for the Office of Telecommunications (OT) on February 29, 1976 after serving as Acting Administrative Officer for four months. Prior to this assignment Mr. Dodson was Budget Officer for OT.

Mr. Dodson's Federal employment began in 1962 with the Interstate Commerce Commission, where he served for five years as an Accountant and later as an Auditor. Following this he spent five years at the Office of Equal Opportunity (OEO) in systems analysis, and later as Chief of a Technical Assistance Branch for OEO Grantees.

He also participated, as a Fellow, in the first Intergovernmental Affairs Fellowship Program initiated by the U.S. Civil Service Commission and conducted by the Brookings Institution.

He holds the Bachelor of Science degree in Accounting from Norfolk State College.

Patent and Trademark Office

BIOGRAPHIES OF PRINCIPAL OFFICIALS

Principal Officials:

C. Marshall Dann, Commissioner of Patents
and Trademarks

Lutrelle F. Parker, Deputy Commissioner
of Patents and Trademarks

Rene D. Tegtmeyer, Assistant Commissioner
for Patents

Bernard A. Meany, Assistant Commissioner
for Trademarks

Joseph F. Nakamura, Solicitor

Richard J. Shakman, Assistant Commissioner
for Administration

Biographies follow.

C. MARSHALL DANN

Date & Place of Birth Local Residence
March 27, 1915 7203 Marine Drive
Wilkinsburg, Pennsylvania Alexandria, Virginia

Education

1935 Worcester Polytechnic Institute, B.S.
1942 University of Delaware, M.S.
1949 Georgetown University, LLB

Military Service

None

Present Position

Commissioner of Patents and Trademarks, Presidential Appointment,
February 11, 1974

Experience Prior to Appointment to Present Position

1968-1974 Chief Counsel, Patent Division, DuPont Company
1954-1968 Assistant Manager, Patent Division, DuPont Company
1950-1954 Attorney, Patent Division, DuPont Company
1949-1949 Patent Agent, Patent Division, DuPont Company
1935-1945 Chemist, DuPont Company

Honors and Professional Affiliations

Former President, American Patent Law Association
Former President, Philadelphia Patent Law Association
Member, American and Delaware Bar Associations
Tau Beta Pi
Trustee, Worcester Polytechnic Institute
Robert H. Goddard Award of W.P.I. (1975)
Chairman, U. S. Delegation to Conferences of World Intellectual
Property Organization
Chairman, Plenary Committee, ICIREPAT
Recipient of Jefferson Medal (1976)

Admitted to Practice Before Courts of

Delaware, Maryland, District of Columbia

LUTRELLE F. PARKER

<u>Date and Place of Birth</u>	<u>Local Residence</u>
March 10, 1924 Newport News, Virginia	2016 South Fillmore Street Arlington, Virginia 22204

Education

1945	Cornell University Midshipmen's School, Ensign (Commissioned)
1946	Howard University School of Engineering, BS C.E.
1952	Georgetown University School of Law, J.D.
1964-1965	Dept. of Commerce Science & Technology Fellowship Program

Military Service

1944-1946 Ensign, U.S. Navy
1946-Present U.S. Naval Reserve; present rank, Captain, USNR-R

Present Position

Deputy Commissioner of Patents and Trademarks, Presidential Appointment,
February 13, 1975

Experience Prior to Appointment to Present Position

- Patent and Trademark Office -
1975-1977 Examiner-in-Chief and Member, Board of Appeals
1962-1970 Law Examiner (Trial Attorney) and Special Assistant to
First Assistant Commissioner, Office of Solicitor
1949-1962 Patent Examiner, Patent Examining Operations
1948-1949 Classification Examiner, Classification Division III
1948-1948 Patent Examiner, Division 7

Honors and Professional and Civic Affiliations

Member, District of Columbia and Virginia Bars
Registered Civil Engineer
Former Chairman, Arlington County Planning Commission
Member, Admissions Committee, Georgetown University
Former President, Dept. of Commerce Science & Technology Fellowship
Program
Vice Chairman, Board of Trustees, Arlington Hospital
Member, Board of Trustees, George Mason University
Member, Board of Trustees for a Presidential Classroom for Young Americans
Outstanding Citizens Awards, National Links, Inc. (1976)
Civic Award, Alpha Phi Alpha (1972)
Who's Who in Government (1972)
Presidential Certificate of Commendation (1970)
Superior Performance Award (1969)
Outstanding Citizens Award, Arlington Links, Inc. (1968)
Meritorious Service Award (Silver Medal) (1963)
Outstanding Alumni Award, Howard University School of Engineering (1961)

Admitted to Practice Before Courts of

District of Columbia, Virginia, U.S. Court of Customs and Patent Appeals

RENE D. TEGTMEYER

Date & Place of Birth

Local Residence

January 5, 1934
St. Louis, Missouri

1703 Chesterford Way
McLean, Virginia 22101

Education

1956	Washington University (St. Louis)	BSME
1963	George Washington University	JD

Military Service

1956-1959	Officer, U. S. Air Force
1961-1968	Officer, U. S. Air Force Reserve

Present Position

Assistant Commissioner for Patents

Experience Prior to Appointment to Present Position

- Patent and Trademark Office -

1973-1975	Assistant Commissioner	Trademarks
1971-1973	Assistant Commissioner	Appeals, Legislation & Trademarks
1970-1971	Director	Office of Legislation & International Affairs
1968-1970	Director	Office of Legislative Planning
1965-1968	International Patent Specialist	Office of International Patent & Trademark Affairs
1959-1965	Patent Examiner	Patent Examining Operations
1956-1956	Structures Engineer	North American Aviation

Honors and Professional Affiliations

Pi Tau Sigma (Mechanical Engineering Honorary)
Tau Beta Pi (General Engineering Honorary)
Congressional Fellowship (1966)
Government Patent Lawyers Association
Patent Office Society
American Bar Association
American Patent Law Association
Federal Bar Association

Admitted to Practice Before Courts of

Virginia, District of Columbia, U. S. Court of Customs and Patent Appeals

BERNARD A. MEANY

Date & Place of Birth

Local Residence

January 20, 1935
Jersey City, New Jersey

1600 S. Eads Street
Arlington, Virginia 22202

Education

1965	Georgetown University Law Center	JD
1956-57	Syracuse University Graduate School	
1956	Marquette University	BSME
1952	St. Peter's Prep School	

Military Service

None

Present Position

Assistant Commissioner for Trademarks, Presidential Appt., Apr. 16, 1975

Experience Prior to Appointment to Present Position

1974-1975	Program Director of Contracts & Licensing, IBM Corp. Hdqrs.-N.Y.
1971-1974	Program Director-Licensing, IBM Corp. Hdqrs.-N.Y.
1968-1971	Contract Representative, IBM Corp. Hdqrs.-N.Y.
1967-1968	Patent Attorney, IBM Corporation-Menlo Park, Calif.
1965-1967	Patent Attorney, IBM Corporation-San Jose, Calif.
1961-1965	Patent Attorney-in-Training, IBM Corporation-Washington, D.C.
1958-1961	Senior Associate Engineer, IBM Corporation, Kingston, N.Y.
1956-1958	Associate Engineer/Junior Engineer, IBM Corporation, Poughkeepsie, N.Y.

Honors and Professional Affiliations

American Patent Law Association
American Society of Mechanical Engineers
Sigma Phi Delta Engineering Fraternity
Delta Theta Phi Law Fraternity
IBM Outstanding Contribution for Licensing Relationship
IBM Scholarship to Georgetown University
Partial Scholarship-Marquette University & Stevens Institute of Technology
American Jurisprudence Prize for Contract Law
Best Speaker-Marquette College of Engineering
Lecturer-Practicing Law Institute; American Management Association; Licensing Executives Society; Bar Associations; U.S. Trademark Association
Honorary Member-League of United Latin American Citizens
Member-Executive Advisory Board to the President of Fairfield University

Admitted to Practice Before Courts of

California State Bar; Federal Bar (9th Cir.); Patent Bar; U. S. Court
Customs and Patent Appeals

JOSEPH F. NAKAMURA

Date and Place of Birth

May 19, 1919
Flint, Michigan

Residence

4010 Ingersol Drive
Silver Spring, Maryland

Education

1940 University of Michigan B.S.E.
1951 Georgetown University LLB

Military Service

None

Present Position

Solicitor, Patent and Trademark Office, September 1973
to present

Experience Prior to Present Position

1970 - 1973 Deputy Solicitor, Patent and Trademark Office
1960 - 1970 Patent Attorney, Patent and Trademark Office
1946 - 1960 Patent Examiner, Patent and Trademark Office
1941 - 1946 Examiner, U.S. Civil Service Commission

Honors and Professional Affiliation

Member, American Bar Association
Member, Federal Bar Association
Member, District of Columbia Bar
Member, American Chemical Society
Department of Commerce Gold Medal Award

Admitted to Practice

United States District Court for the District of Columbia
United States Court of Appeals for the District of
Columbia Circuit
United States Court of Customs and Patent Appeals

