



THE OTA LEGACY

The Congressional Office of Technology Assessment closed on September 29, 1995. During its 23-year history, OTA provided Congressional members and committees with analysis of the scientific and technological issues that are increasingly relevant to public policy and legislative action.

OTA occupied a unique role among the Congressional information agencies. Unlike the General Accounting Office, which is primarily concerned with evaluation of ongoing programs, and the Congressional Research Service, which provides rapid information on legislative topics, OTA provided a deeper, more comprehensive, and more technical level of analysis. Through eleven Congressional sessions, OTA became a key resource for Congressional members and staff confronting technological issues in crafting public policy. Its existence brought a healthy balance to the analytical resources available to the executive and legislative branches of government.

The agency's legacy is found in the many items of legislation it influenced and in the channels of communication its staff helped foster between legisla-

Cont'd...



THE OTA LEGACY

tive policymakers and members of the scientific, technical, and business communities. The Office's legacy is also found in its hundreds of publications, gathered for the first time in electronic form on this set of CD-ROMs: *The OTA Legacy, 1972-1995*.

These disks contain all the formally issued reports of the Office of Technology Assessment, as well as many background papers and contractor papers—over 100,000 pages of the best available analyses of the scientific and technical policy issues of the past two decades. In addition, the disks contain supplemental historical materials that illuminate the history and impact of the agency, which has been widely imitated internationally by governments interested in wise and informed stewardship of the public trust on issues with technical complexity. The OTA reports collected here are widely acknowledged to be nonpartisan, objective, and thorough. In many cases, they have also proven to be of enduring interest and relevance. By publishing its written legacy in electronic form, the Office of Technology Assessment hopes to preserve the investment made in its work for future users.

THE OTA LEGACY



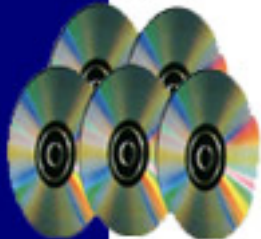
Technology Assessment and the Work of Congress

A history of the Office of Technology Assessment



OTA Publications

An electronic archive of the Office of Technology Assessment



About This Disk...

How to find information using the navigation ellipse and the full-text search tools.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The links that follow lead to explanations of the structure and function of the Office of Technology Assessment and to articles and press accounts that discuss the historical and political context in which it operated.

History and Function of OTA

- **The Assessment Process**

- **The Technology Assessment Act**
October 13, 1972

- **Technology Assessment**
Current Trends and the Myth of a Formula
Peter D. Blair
Assistant Director, Office of Technology Assessment
May 2, 1994



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

■ **New Challenge or the Past Revisited?**

The Office of Technology Assessment in Historical Context

Gregory C. Kunkle

Technology in Society, Vol. 17, No. 2, pp. 175-196, 1995

The End of OTA

■ **Remarks of Roger Herdman, OTA Director**

September 29, 1995

■ **In Memoriam: The Office of Technology Assessment, 1972-1995**

Hon. Amo Houghton

Congressional Record, September 28, 1995



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Press Coverage

■ **Technology Assessment No Longer Theoretical**

James H. Krieger

Chemical & Engineering News—April 6, 1970

■ **The Debate Over Assessing Technology**

Business Week—April 6, 1972

■ **OTA Caught in Partisan Crossfire**

Colin Norman

Technology Review—October/November 1977

■ **Little-Known Agency Draws Worldwide Interest**

David Burnham

New York Times—January 12, 1984



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

■ **OTA Emerges as Nonpartisan Player**

Barton Reppert

Associated Press/Washington Post—January 5, 1988

■ **Death by Congressional Ignorance**

M. Granger Morgan

Pittsburgh Post-Gazette—August 2, 1995

■ **Congress's Science Agency Prepares To Close Its Doors**

Warren E. Leary

New York Times—September 24, 1995



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The Assessment Process

OTA was governed by the congressional **Technology Assessment Board** (TAB). TAB was made up of six Senators and six Representatives with equal representation from each party. The chairmanship and vice chairmanship alternated between the Senate and House in succeeding Congresses. The Technology Assessment Board appointed OTA's Director for a six-year term. An **advisory council** of 10 eminent citizens from industry, academia, and elsewhere outside the federal government were appointed by the Board to advise the Agency. The Comptroller General of the United States and the Director of the Congressional Research Service served as statutory members.

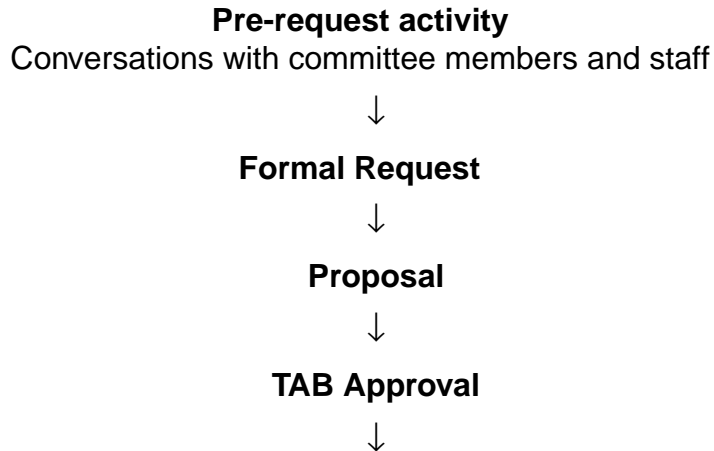
Preparing the Reports

The bulk of OTA's work centered on comprehensive assessments that took one to two years to complete. OTA undertook assessments at the request of the Chairman of any congressional committee. The Chairman could request the work personally, on behalf of a ranking minority member, or on behalf of a majority of committee members. The Technology Assessment Board could also request work, as could the Director. In practice, most studies were requested by the Chairman and the Ranking Member of a Committee,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and many were supported by more than one committee. OTA staff reviewed requests to determine whether resources were available, whether OTA could effectively provide the information, and whether interest was broad and bipartisan. The OTA Director submitted proposals to the Technology Assessment Board, which made the final decision on whether to proceed. The Board reviewed all major studies prior to release. The path below illustrates the major steps in the assessment process:



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Selection of advisory panel

Data collection and analysis

Advisory panel meetings

Contractor reports

Briefings

Surveys, site visits, workshops



Draft final report

Staff drafts report



Draft final report

Staff drafts report

Internal & external review

Revision & transmission to Director and TAB for approval



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Release summary & full report

Embargoed press packet

Press conference

Mailings to Congress, study participants, libraries, interested parties

Electronic dissemination



Report coverage

Science press

Popular press, radio, TV

Professional associations

Information services



Policy action

Congressional hearings

Staff briefing & talks

Legislative action

Interaction with Executive Branch



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The research and writing of the assessments were conducted by the OTA staff of about 200, of which two-thirds were the professional research staff. Among the research staff, 88% had advanced degrees at the close of the agency, 58% with Ph.D.'s, primarily in the physical, life, and social sciences, economics, and engineering. About 40% of the research staff were temporary appointments of professionals recruited specifically to staff ongoing assessments. For specific information or analysis, OTA also contracted with key individuals or organizations. Contractors analyzed data, conducted case studies, and otherwise provided expertise to complement staff capability.

Public Participation

OTA worked to ensure that the views of the public were fairly reflected in its assessments. The Agency assembled an advisory panel of stakeholders and experts for each major study to ensure that reports were objective, fair, and authoritative. These panels met two or three times during a study. They helped to shape studies by suggesting alternative approaches, reviewing documents, and critiquing reports at the final stages. No attempt was made to develop consensus among panel members; in fact, a wide diversity of views was sought. OTA retained full responsibility for the content and conclusions of each report. In all, nearly 5000 outside panelists and workshop participants came to OTA



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

annually to help OTA in its work.

In addition to the advisory panel, many people assisted with the studies by participating in technical workshops, providing information, reviewing documents, or just talking with OTA staff. These interactions helped OTA to identify and take into account contrasts between the perspectives of technically trained and lay citizens; the involvement of people with differing backgrounds and interests greatly strengthened OTA work.

Release of Reports

Each assessment was subjected to an extensive formal review conducted by OTA staff and outside experts. After a completed assessment was approved by the Director, copies of the formal report were sent to the Technology Assessment Board for its review and authorization for release. Approved reports were forwarded to the requesting committee or committees, summaries were sent to all Members of Congress, and then the report was released to the public. OTA assessments were published by the Government Printing Office and were frequently reprinted by commercial publishers.

Research Coordination

OTA worked with the other congressional support agencies—the Congressional Budget



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Office, the Congressional Research Service of the Library of Congress, and the General Accounting Office—in an interagency Research Notification System. Its purpose was to coordinate activities and exchange information to avoid duplication of effort. Representatives of each organization met regularly, and biweekly status reports were published in a central directory of congressional research activity. Similarly, OTA stayed in touch with the published work and current activities of analysts and researchers in Federal executive and legislative branch agencies and throughout the country.

Structure of the Agency

The Office of Technology Assessment was reorganized periodically as it grew and as the types of technology expertise relevant to public policy evolved. By 1995, OTA was organized into two main analytical divisions, each comprised of three research programs, along with an Office of Congressional and Public Affairs.

Within the *Industry, Commerce, and International Security Division*, the *Energy, Transportation, and Infrastructure Program* was responsible for examining the role of technology in extracting, producing, and using energy resources; in designing, operating, and improving transportation systems; and in planning, constructing, and maintaining infrastructure. It addressed the impacts of these technologies and the factors that affect



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

their ability to support commerce and other societal goals. Its work also included applications of materials to energy, transportation, and infrastructure systems, including the development of natural and manufactured material resources through extraction, processing, use, and recycling or waste management.

The *Industry, Telecommunications, and Commerce Program* analyzed the relationships between technology and international industrial competitiveness, telecommunications and computing technologies, international trade and economic development, industrial productivity, and related topics. It considered the effects of technological change on jobs and training, and analyzed the changing role of electronic technologies in the nation's industrial, commercial, and governmental institutions and the influence of related regulations and policies.

The *International Security and Space Program* focused on implications of technology and technological change on national defense issues and on issues of international stability, arms control, arms proliferation, terrorism, and alliance relations. It addressed a broad range of issues including space transportation, earth observation, and international cooperation and competition in the exploration, use, and commercialization of space.

The second major OTA analytical division was the *Health, Education, and Environment Division*. Within it, the *Education and Human Resources Program* critically exam-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ined a wide variety of technologies for learning. It also analyzed science-grounded human resource topics, including the costs, availability, effectiveness, and impacts of technologies in areas such as long-term care, services and housing for people with disabilities, prevention of drug abuse, and issues of crime and violence.

The *Environment Program* addressed areas including the use and conservation of renewable resources; pollution prevention, control, and remediation; and environmental health and risk management. Its assessments included topics such as agriculture, management of public lands, biological diversity, risk assessment methods and policy, air and water pollution, management of solid, hazardous, and nuclear wastes, and the effects of weather and climate change.

The *Health Program* assessed specific clinical and general health care technologies as well as broader issues of health policy related to or with implications for technology. It also analyzed applications of the biological and behavioral sciences, including biotechnology, human molecular genetics, neurological sciences, and health-related behaviors. The Health Program was also responsible for OTA's statutory methodology oversight responsibilities regarding Vietnam veterans health studies.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

At the close of the agency, the Technology Assessment Board of the 103rd Congress included the following members:*

EDWARD M. KENNEDY, Massachusetts, *Chairman*
DON SUNDQUIST, Tennessee, *Vice Chairman*

SENATE

ERNEST F. HOLLINGS, South Carolina
CLAIBORNE PELL, Rhode Island
ORRIN G. HATCH, Utah
CHARLES E. GRASSLEY, Iowa
DAVE DURENBERGER, Minnesota

HOUSE

GEORGE E. BROWN, JR. California
JOHN D. DINGELL, Michigan
JIM McDERMOTT, Washington
AMO HOUGHTON, New York
MICHAEL G. OXLEY, Ohio

ROGER C. HERDMAN
(Nonvoting)

*The TAB for the 104th Congress had not yet been appointed.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

At the close of the agency, the Technology Assessment Advisory Council included the following members:

JAMES C. HUNT, *Chairman*

Distinguished Professor,
Health Sciences Center
University of Tennessee
Memphis, Tennessee

LEWIS M. BRANSCOMB

Director
Science, Technology, & Public Policy
Program, Harvard University
Cambridge, Massachusetts

MAX LENNON, *Vice Chairman*

President and CEO
Eastern Foods, Inc.
Atlanta, Georgia

HERBERT (TED) DOAN

President (Ret.)
The Dow Chemical Company
Midland, Michigan

CHARLES A. BOWSHER

Comptroller General of the United States
Washington, D.C.

NEIL E. HARL

Charles F. Curtiss Distinguished Professor
Iowa State University
Ames, Iowa



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

JOSHUA LEDERBERG

Professor
Rockefeller University
New York, New York

DANIEL MULHOLLAN

Director, Congressional Research Service
The Library of Congress
Washington, D.C.

THOMAS J. PERKINS

General Partner
Kleiner, Perkins, Caufield and Byers
San Francisco, California

JOHN F.M. SIMS

Vice President, Marketing
Usibelli Coal Mine, Inc.
Fairbanks, Alaska

L. DOUGLAS SMOOT

Dean, College of Engineering
and Technology
Brigham Young University
Salt Lake City, Utah

MARINA v.N. WHITMAN

Professor, Institute of Public Policy Studies
University of Michigan
Ann Arbor, Michigan



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The Technology Assessment Act of 1972

*Public Law 92-484
92d Congress, H.R. 10243
October 13, 1972*

An Act

To establish an Office of Technology Assessment for the Congress as an aid in the identification and consideration of existing and probable impacts of technological application; to amend the National Science Foundation Act of 1950; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the Technology Assessment Act of 1972.

FINDINGS AND DECLARATION OF PURPOSE

SEC. 2. The Congress hereby finds and declares that:

(a) As technology continues to change and expand rapidly, its applications are—



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

1. large and growing in scale; and
2. increasingly extensive, pervasive, and critical in their impact, beneficial and adverse, on the natural and social environment.

(b) Therefore, it is essential that, to the fullest extent possible, the consequences of technological applications be anticipated, understood, and considered in determination of public policy on existing and emerging national problems.

(c) The Congress further finds that:

1. the Federal agencies presently responsible directly to the Congress are not designed to provide the legislative branch with adequate and timely information, independently developed, relating to the potential impact of technological applications, and
2. the present mechanisms of the Congress do not and are not designed to provide the legislative branch with such information.

(d) Accordingly, it is necessary for the Congress to—

1. equip itself with new and effective means for securing competent, unbiased information concerning the physical, biological, economic, social, and political effects of such



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

applications; and

2. utilize this information, whenever appropriate, as one factor in the legislative assessment of matters pending before the Congress, particularly in those instances where the Federal Government may be called upon to consider support for, or management or regulation of, technological applications.

ESTABLISHMENT OF THE OFFICE OF TECHNOLOGY ASSESSMENT

SEC. 3. (a) In accordance with the findings and declaration of purpose in section 2, there is hereby created the Office of Technology Assessment (hereinafter referred to as the Office) which shall be within and responsible to the legislative branch of the Government.

(b) The Office shall consist of a Technology Assessment Board (hereinafter referred to as the Board) which shall formulate and promulgate the policies of the Office, and a Director who shall carry out such policies and administer the operations of the Office.

(c) The basic function of the Office shall be to provide early indications of the probable beneficial and adverse impacts of the applications of technology and to develop other



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

coordinate information which may assist the Congress. In carrying out such function, the Office shall:

1. identify existing or probable impacts of technology or technological programs;
2. where possible, ascertain cause-and-effect relationships;
3. identify alternative technological methods of implementing specific programs;
4. identify alternative programs for achieving requisite goals;
5. make estimates and comparisons of the impacts of alternative methods and programs;
6. present findings of completed analyses to the appropriate legislative authorities;
7. identify areas where additional research or data collection is required to provide adequate support for the assessments and estimates described in paragraph (1) through (5) of this subsection; and
8. undertake such additional associated activities as the appropriate authorities specified under subsection (d) may direct.

- (d) Assessment activities undertaken by the Office may be initiated upon the request of:
1. the chairman of any standing, special, or select committee of either House of the Congress, or of any joint committee of the Congress, acting for himself or at the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

- request of the ranking minority member or a majority of the committee members;
- 2. the Board; or
- 3. the Director, in consultation with the Board.

(e) Assessments made by the Office, including information, surveys, studies, reports, and findings related thereto, shall be made available to the initiating committee or other appropriate committees of the Congress. In addition, any such information, surveys, studies, reports, and findings produced by the Office may be made available to the public except where

- 1. to do so would violate security statutes; or
- 2. the Board considers it necessary or advisable to withhold such information in accordance with one or more of the numbered paragraphs in section 552(b) of title 5, United States Code.

TECHNOLOGY ASSESSMENT BOARD

SEC. 4. (a) The Board shall consist of thirteen members as follows:

- 1. six Members of the Senate, appointed by the President pro tempore of the Senate, three from the majority party and three from the minority party;



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

2. six Members of the House of Representatives appointed by the Speaker of the House of Representatives, three from the majority party and three from the minority party; and
3. the Director, who shall not be a voting member.

(b) Vacancies in the membership of the Board shall not affect the power of the remaining members to execute the functions of the Board and shall be filled in the same manner as in the case of the original appointment.

(c) The Board shall select a chairman and a vice chairman from among its members at the beginning of each Congress. The vice chairman shall act in the place and stead of the chairman in the absence of the chairman. The chairmanship and the vice chairmanship shall alternate between the Senate and the House of Representatives with each Congress. The chairman during each even-numbered Congress shall be selected by the Members of the House of Representatives on the Board from among their number. The vice chairman during each Congress shall be chosen in the same manner from that House of Congress other than the House of Congress of which the chairman is a Member.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

(d) The Board is authorized to sit and act at such places and times during the sessions, recesses, and adjourned periods of Congress, and upon a vote of a majority of its members, to require by subpoena or otherwise the attendance of such witnesses and the production of such books, papers, and documents, to administer such oaths and affirmations, to take such testimony, to procure such printing and binding, and to make such expenditures, as it deems advisable. The Board may make such rules respecting its organization and procedures as it deems necessary, except that no recommendation shall be reported from the Board unless a majority of the Board assent. Subpoenas may be issued over the signature of the chairman of the Board or of any voting member designated by him or by the Board, and may be served by such person or persons as may be designated by such chairman or member. The chairman of the Board or any voting member thereof may administer oaths or affirmations to witnesses.

DIRECTOR AND DEPUTY DIRECTOR

SEC. 5. (a) The Director of the Office of Technology Assessment shall be appointed by the Board and shall serve for a term of six years unless sooner removed by the Board. He shall receive basic pay at the rate provided for level III of the Executive Schedule under section 5314 of title 5, United States Code.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

(b) In addition to the powers and duties vested in him by this Act, the Director shall exercise such powers and duties as may be delegated to him by the Board.

(c) The Director may appoint with the approval of the Board, a Deputy Director who shall perform such functions as the Director may prescribe and who shall be Acting Director during the absence or incapacity of the Director or in the event of a vacancy in the office of Director. The Deputy Director shall receive basic pay at the rate provided for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

(d) Neither the Director nor the Deputy Director shall engage in any other business, vocation, or employment than that of serving as such Director or Deputy Director, as the case may be; nor shall the Director or Deputy Director, except with the approval of the Board, hold any office in, or act in any capacity for, any organization, agency, or institution with which the Office makes any contract or other arrangement under this Act.

AUTHORITY OF THE OFFICE

SEC. 6. (a) The Office shall have the authority, within the limits of available appropriations, to do all things necessary to carry out the provisions of this Act, including, but



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

without being limited to, the authority to

1. make full use of competent personnel and organizations outside the Office, public or private, and form special ad hoc task forces or make other arrangements when appropriate;
2. enter into contracts or other arrangements as may be necessary for the conduct of the work of the Office with any agency or instrumentality of the United States, with any State, territory, or possession or any political subdivision thereof, or with any person, firm, association, corporation, or educational institution, with or without reimbursement, without performance or other bonds, and without regard to section 3709 of the Revised Statutes (41 U.S.C. 5);
3. make advance, progress, and other payments which relate to technology assessment without regard to the provisions of section 3648 of the Revised Statutes (31 U.S.C. 529);
4. accept and utilize the services of voluntary and uncompensated personnel necessary for the conduct of the work of the Office and provide transportation and subsistence as authorized by section 5703 of title 5, United States Code, for persons serving without compensation;
5. acquire by purchase, lease, loan, or gift, and hold and dispose of by sale, lease, or



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

loan, real and personal property of all kinds necessary for or resulting from the exercise of authority granted by this Act; and

6. prescribe such rules and regulations as it deems necessary governing the operation and organization of the Office.

(b) Contractors and other parties entering into contracts and other arrangements under this section which involve costs to the Government shall maintain such books and related records as will facilitate an effective audit in such detail and in such manner as shall be prescribed by the Office, and such books and records (and related documents and papers) shall be available to the Office and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination.

(c) The Office, in carrying out the provisions of this Act, shall not, itself, operate any laboratories, pilot plants, or test facilities.

(d) The Office is authorized to secure directly from any executive department or agency information, suggestions, estimates, statistics, and technical assistance for the purpose of carrying out its functions under this Act. Each such executive department or agency shall



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

furnish the information, suggestions, estimates, statistics, and technical assistance directly to the Office upon its request.

(e) On request of the Office, the head of any executive department or agency may detail, with or without reimbursement, any of its personnel to assist the Office in carrying out its functions under this Act.

(f) The Director shall, in accordance with such policies as the Board shall prescribe, appoint and fix the compensation of such personnel as may be necessary to carry out the provisions of this Act.

ESTABLISHMENT OF THE TECHNOLOGY ASSESSMENT ADVISORY COUNCIL

SEC. 7. (a) The Office shall establish a Technology Assessment Advisory Council (hereinafter referred to as the Council). The Council shall be composed of the following twelve members:

1. ten members from the public, to be appointed by the Board, who shall be persons eminent in one or more fields of the physical, biological, or social sciences or engineer-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

- ing or experienced in the administration of technological activities, or who may be judged qualified on the basis of contributions made to educational or public activities;
2. the Comptroller General; and
 3. the Director of the Congressional Research Service of the Library of Congress.

(b) The Council, upon request by the Board, shall—

1. review and make recommendations to the Board on activities undertaken by the Office or on the initiation thereof in accordance with section 3(d);
2. review and make recommendations to the Board on the findings of any assessment made by or for the Office; and
3. undertake such additional related tasks as the Board may direct.

(c) The Council, by majority vote, shall elect from its members appointed under subsection (a)(1) of this section a Chairman and a Vice Chairman, who shall serve for such time and under such conditions as the Council may prescribe. In the absence of the Chairman, or in the event of his incapacity, the Vice Chairman shall act as Chairman.

(d) The term of office of each member of the Council appointed under subsection (a)(1)



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

shall be four years except that any such member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term. No person shall be appointed a member of the Council under subsection (a)(1) more than twice. Terms of the members appointed under subsection (a)(1) shall be staggered so as to establish a rotating membership according to such method as the Board may devise.

(e)

1. The members of the Council other than those appointed under subsection (a)(1) shall receive no pay for their services as members of the Council, but shall be allowed necessary travel expenses (or, in the alternative, mileage for use of privately owned vehicles and per diem in lieu of subsistence at not to exceed the rate prescribed in sections 5702 and 5704 of title 5, United States Code), and other necessary expenses incurred by them in the performance of duties vested in the Council, without regard to the provisions of subchapter 1 of chapter 57 and section 5731 of title 5, United States Code, and regulations promulgated thereunder.

2. The members of the Council appointed under subsection (a)(1) shall receive compensation for each day engaged in the actual performance of duties vested in the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Council at rates of pay not in excess of the daily equivalent of the highest rate of basic pay set forth in the General Schedule of section 5332(a) of title 5, United States Code, and in addition shall be reimbursed for travel, subsistence, and other necessary expenses in the manner provided for other members of the Council under paragraph (1) of this subsection.

UTILIZATION OF THE LIBRARY OF CONGRESS

SEC. 8. (a) To carry out the objectives of this Act, the Librarian of Congress is authorized to make available to the Office such services and assistance of the Congressional Research Service as may be appropriate and feasible.

(b) Such services and assistance made available to the Office shall include, but not be limited to, all of the services and assistance which the Congressional Research Service is otherwise authorized to provide to the Congress.

(c) Nothing in this section shall alter or modify any services or responsibilities, other than those performed for the Office, which the Congressional Research Service under law performs for or on behalf of the Congress. The Librarian is, however, authorized to



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

establish within the Congressional Research Service such additional divisions, groups, or other organizational entities as may be necessary to carry out the purpose of this Act.

(d) Services and assistance made available to the Office by the Congressional Research Service in accordance with this section may be provided with or without reimbursement from funds of the Office, as agreed upon by the Board and the Librarian of Congress.

UTILIZATION OF THE GENERAL ACCOUNTING OFFICE

SEC. 9. (a) Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel, and procurement) and such other services as may be appropriate shall be provided the Office by the General Accounting Office.

(b) Such services and assistance to the Office shall include, but not be limited to, all of the services and assistance which the General Accounting Office is otherwise authorized to provide to the Congress.

(c) Nothing in this section shall alter or modify any services or responsibilities, other than those performed for the Office, which the General Accounting Office under law performs



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

for or on behalf of the Congress.

(d) Services and assistance made available to the Office by the General Accounting Office in accordance with this section may be provided with or without reimbursement from funds of the Office, as agreed upon by the Board and the Comptroller General.

COORDINATION WITH THE NATIONAL SCIENCE FOUNDATION

SEC. 10. (a) The Office shall maintain a continuing liaison with the National Science Foundation with respect to—

1. grants and contracts formulated or activated by the Foundation which are for purposes of technology assessment; and
2. the promotion of coordination in areas of technology assessment, and the avoidance of unnecessary duplication or overlapping of research activities in the development of technology assessment techniques and programs.

(b) Section 3(b) of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1862(b)), is amended to read as follows:

“(b) The Foundation is authorized to initiate and support specific scientific activities in



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

connection with matters relating to international cooperation, national security, and the effects of scientific applications upon society by making contracts or other arrangements (including grants, loans, and other forms of assistance) for the conduct of such activities. When initiated or supported pursuant to requests made by any other Federal department or agency, including the Office of Technology Assessment, such activities shall be financed whenever feasible from funds transferred to the Foundation by the requesting official as provided in section 14(g), and any such activities shall be unclassified and shall be identified by the Foundation as being undertaken at the request of the appropriate official.”

ANNUAL REPORT

SEC. 11. The Office shall submit to the Congress an annual report which shall include, but not be limited to, an evaluation of technology assessment techniques and identification, insofar as may be feasible, of technological areas and programs requiring future analysis. Such report shall be submitted not later than March 15 of each year.

APPROPRIATIONS

SEC. 12. (a) To enable the Office to carry out its powers and duties, there is hereby



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

authorized to be appropriated to the Office, out of any money in the Treasury not otherwise appropriated, not to exceed \$5,000,000 in the aggregate for the two fiscal years ending June 30, 1973, and June 30, 1974, and thereafter such sums as may be necessary.

(b) Appropriations made pursuant to the authority provided in subsection (a) shall remain available for obligation, for expenditure, or for obligation and expenditure for such period or periods as may be specified in the Act making such appropriations.

Approved October 13, 1972.

LEGISLATIVE HISTORY

HOUSE REPORTS

No. 92-469 (Comm. on Science and Astronautics) and No. 92-1436 (Comm. of Conference).

SENATE REPORT

No. 92-1123 (Comm. on Rules and Administration).



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

CONGRESSIONAL RECORD

Vol. 118 (1972): Feb. 8, considered and passed House. Sept. 14, considered and passed Senate, amended Sept. 22, Senate agreed to conference report. Oct. 4, House agreed to conference report.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Technology Assessment

Current Trends and the Myth of a Formula

Peter D. Blair

Assistant Director, Office of Technology Assessment

*adapted from plenary remarks at the First Meeting of the International Association of
Technology Assessment and Forecasting Institutions*

May 2, 1994

Bergen, Norway

“As new discoveries are made, new truths discovered, and manners and opinions change with the change of circumstances, institutions must advance also to keep pace with the times.”

Thomas Jefferson

Enormous changes around the world—the fall of the Berlin Wall, the truly historic changes in South Africa, the economic emergence of the Pacific rim, and the globalization of the world economy—have proven the wisdom of Jefferson’s insistence on main-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

taining flexibility in institutions of public governance. But in addition to constant economic and political change, governments and public institutions are challenged by the rapid evolution of science and technology and all the effects that flow from that evolution. Jefferson—a technologist—would agree that an ability to share experiences and to better gauge the impacts of technology on societies around the world are essential to our future.

For the first two decades of the Office of Technology Assessment's existence, its activities have often been referred to as a kind of experiment for trying to incorporate a better understanding of technology and science into the legislative policy process. One result of that experiment is the emergence of a consensus that it is impossible to reduce technology assessment to a formula. At OTA, there are many variations in the methods and approaches used in the work, and the agency's approach is, to be sure, but one variation of how technology assessment is viewed in different institutional settings. OTA doesn't have everything right in the process of technology assessment—no one does, and those that suggest the contrary should consider the advice of Will Rogers: "What gets us into trouble isn't so much what we don't know, it's what we know for sure that just ain't so." Nonetheless, many lessons have been learned over the years.

The OTA was created in 1972 by the U.S. Congress to "provide early indications of the probable beneficial and adverse impacts of the applications of technology." This original



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

mandate has evolved somewhat over time: the agency is now regarded as fulfilling a more general role of providing congressional committees, which are the key policy formulating vehicles in the Congress, with objective analysis of public policy issues related to scientific and technological change. This new mandate actually incorporates the original mandate, but it is much broader and more problem-oriented, and in practice the agency's activities are almost totally determined by the committees of Congress. The transformation of the agency's mandate came about due to a mixture of pragmatism and of priorities in Congressional activities, but this transformation explains the way the agency operates today.

The Office of Technology Assessment: A Congressional Innovation

The efforts to create an institution in the U.S. like OTA began in the mid-1960s when Congressman Emilio Daddario, then Chairman of the Subcommittee on Science, Research and Development in the House of Representatives, introduced legislation to establish a Technology Assessment Board—much like a committee of Congress. After much heated debate in the House over several Congressional sessions, a new version of the bill was introduced seeking to create a new technology assessment agency in the Legislative branch of government. Many outside the United States don't appreciate the significance



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

of such an action. In the United States, executive branch government agencies are created and retired quite frequently—at present we have hundreds. But in the legislative branch—a branch separate but equal to the executive branch—agency creations are very rare. In fact, at the time of OTA's beginning there had been no such additions since the creation of the General Accounting Office in 1921, over 50 years earlier. Moreover, to date there are only four such agencies: OTA, GAO, the Congressional Budget Office (CBO), and the Congressional Research Service (CRS).

The legislative initiative that created OTA actually started as a fairly modest proposal to provide Congress with a better analytical perspective on technology-related policy, but it ended up being successful politically through a fascinating coalition of interests in Congress that actually had very different objectives.

First, there was the small cadre of legislators with a vision about technology assessment and its role in the legislative process.

Second, there were many in Congress who sought to react institutionally to the then recent creations of executive agencies such the Office of Management and Budget and the Office of Science and Technology Policy in the White House. Indeed, in 1972 many viewed the creation of OTA, as well as the creation of the Congressional Budget Office (CBO) two years later, as part of a Congressional reassertion of authority following the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Nixon presidency. In a twist of interesting irony that seems consistent with the agency's bipartisan perspective, OTA's longest-serving director, Jack Gibbons, went to the White House in 1992 to head the Office of Science and Technology Policy for a Democratic president, having served in the Republican Nixon White House in 1972.

Finally, another important element of the context at the time of OTA's creation was that a number of major policy issues arose during the Nixon presidency that had very technical dimensions to them, such as the U.S. investment in supersonic transport (SST), the antiballistic missile system, and the Trans-Alaska pipeline. With such issues, many in Congress felt they were at a considerable disadvantage in dealing with the Executive branch, which had the established agencies to draw upon as resources along with these newly created entities.

As Senator Edward Kennedy put it in the debates considering the legislation that led to OTA's creation, "without an OTA the role of Congress in national science policy would become more and more perfunctory and more and more dependent on administration facts and figures, with little opportunity for independent Congressional evaluation."

That argument and the political coalition just described led to the passage in both houses of Congress of the Technology Assessment Act of 1972, OTA's enabling statute. Funds were appropriated for OTA's operations in 1973 and the agency began operations



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

in 1974 with a handful of staff which has grown to over 200 today along with a portfolio of activities that spans the entire Congress. Actually, OTA's staff is composed of a core permanent staff of 143 that is supplemented with temporary staff recruited to meet the needs of current assessments. Both permanent and temporary staff include professionals from many disciplines, over half with Ph.D.s.

The key organizational elements created in OTA's enabling statute are the Technology Assessment Board, known as TAB, composed of members of the House and Senate; the Technology Assessment Advisory Council (TAAC), composed primarily of private citizens appointed by TAB; and the Office of the Director, which oversees day-to-day operations of the agency.

Technology Assessment Board (TAB)

The Technology Assessment Board is the central organizational element of OTA's enabling statute. Its composition is unique among the legislative support agencies. TAB is a 12-member governing board of OTA, with six members of the Senate and six of the House, divided equally between the political parties. The principal responsibilities of TAB are to appoint the Director, to authorize the initiation of assessments requested by Congressional Committees, to approve the budget authority associated with those assess-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ments, and finally to authorize delivery of assessment reports to requesting committees and the public by certifying that OTA has carried out its assessment process faithfully—that is, that OTA has considered all the relevant stakeholder interests and issues and undergone extensive external review. OTA receives an annual appropriation from Congress that is allocated to OTA's support operations and among OTA active projects as authorized by TAB.

In the early days of the agency, many thought that TAB would not work. It was predicted by some that TAB would either become a disinterested body or a dysfunctional one due to partisan disagreements. In fact, neither has occurred. Board members are appointed by the leadership in both the House and the Senate and include some of the most powerful members of Congress. The board meets approximately every six weeks when Congress is in session and usually exhibits a strong turnout with disagreements seldom reflecting party or ideological lines.

One incident illustrates the effective functioning of the Technology Assessment Board. A TAB member voted in the board meeting to authorize the release of a somewhat controversial study on the textile industry, acknowledging that the assessment process had been completed effectively. The next day, however, he issued a press release politically criticizing some of the policy options identified in the report's conclusions. Some felt that



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

this was inconsistent and perhaps hypocritical, but actually he had honored both his responsibilities. First he honored his responsibility on the board by not letting the implications for his constituents of some identified policy options affect his position on the overall perspective of the report. At the same time he honored the political interests of his constituents by disagreeing with those options that were not in their interests.

In the early days of the agency TAB played a much stronger role in appointing staff and exerting more direct involvement in assessments, but TAB recognized in the late 1970s that in order for the agency to carry out objective analysis, the day-to-day operation, including especially appointment of project staff and advisory panelists, had to be separated from the members' offices. This facet of OTA's operations has been crucial to its reputation for objectivity over the years, and one that those planning or developing government-sponsored technology assessment institutions should consider carefully.

Technology Assessment Advisory Council (TAAC)

The Technology Assessment Advisory Council is essentially OTA's outside visiting committee. It is appointed by TAB and meets every six months to review the overall direction of the agency and to periodically carry out more detailed reviews of the agency's research programs.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Office of the Director

The Director is responsible for day-to-day operations, hiring of staff, interaction with TAB and TAAC, and strategic planning for the agency. OTA has had four directors: Daddario, who was essentially the founding inspiration for the agency; Russell Peterson who, while serving only a year, effected important institutional changes, especially in separating OTA staff from Members' staffs and in strategically planning the agency's agenda; Jack Gibbons, who during the late 1970s and 1980s presided over 13 years of growth of the agency—both in size and in reputation; and the current director, Roger Herdman, who assumed the helm in 1993 and has been successful in building the agency's strengths and relationships to the legislative process.

OTA's Process of Technology Assessment

Generally OTA undertakes assessments at the request of the Chairs of Congressional Committees. Typically, an OTA assessment takes 18-24 months to complete and costs on the order of \$500,000 in direct costs (although indirect costs are often substantial). The assessments seldom offer specific recommendations. Rather, they articulate the options and the consequences of alternative options.

A great deal of effort goes into defining the scope of an assessment once it has been



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

requested by a Committee Chair. Since the agency frequently has many more requests than it can accommodate, the directors often consult with other Committees of jurisdiction and interest as well as with the TAB board informally to help establish priorities fairly. Once the scope is established, a proposal is prepared for formal consideration by the board and, if approved, the assessment commences.

Currently the agency is addressing a broad range of assessments from energy and environmental technology transfer to eastern Europe, to proliferation of weapons of mass destruction, to global telecommunications policy, to biological pest control, to health care reform. The key elements of an assessment newly underway typically are:

- a comprehensive advisory panel of technical experts and relevant stakeholders;
- a core OTA project team including an experienced project director;
- contractors selected to support major analytical tasks;
- in-house research efforts by the project team;
- workshops convened with additional experts and stakeholders to obtain the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

- most current information possible;
- extensive peer review of draft reports;
- and finally, delivery of reports through congressional hearings, briefings, and public release;

The advisory panels are a particularly important feature of OTA's process. They help refine the project scope, identify additional relevant resources and perspectives on the issues being addressed, and provide the core of extensive peer review. The panel is central, but OTA takes responsibility for the final product. It does not seek consensus from the panel because most often if there were a possible consensus decision or course of action, OTA probably wouldn't have been asked to do the study in the first place. The principal final product is a report, along with summaries, report briefs, personal briefings for members and committees, commercial publishers' reprints, and most recently electronic delivery over the Internet and Capitol Hill's own local area network.

The process briefly outlined here has worked well for OTA as it has evolved over the years in the organizational framework of the U.S. Congress, and many aspects of it may be valuable in other institutional settings. In particular, OTA has some unique features



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

that make it valuable to the Congress's policy process: it is governed by a bipartisan board of politicians that respect the agency's position and perspective; it has a statutory advisory council that reports to that board; it has a multidisciplinary staff that helps minimize ideological and/or methodological bias in analysis; and it draws on outside resources for the bulk of its analysis—it often serves as translator of the technical literature. There is often more heat than light shed when policy mixes with technology, and simply explaining the context of a problem clearly can be of enormous benefit—as in the case when President Eisenhower was stunned to find that half of the U.S. population was of below average intelligence. Finally, OTA's process includes extensive outside peer review, including often as many as a hundred reviewers from many different perspectives.

In summary, Jefferson eloquently pointed out the necessity of government's ability to change with the times. That thought was visionary but it lacked an orderly way of identifying the implications of the technology dimension of those changing times. The Office of Technology Assessment and other international organizations dedicated to developing the art of technology assessment and forecasting may help fill that gap.



*Peter Blair is OTA's Assistant Director of the Industry, Commerce,
and International Security Division*



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

New Challenge or the Past Revisited?

The Office of Technology Assessment in Historical Context

Gregory C. Kunkle

Technology in Society, Vol. 17, No. 2. pp. 175-196, 1995

Copyright © 1995 Elsevier Science, Ltd.

ABSTRACT: Recent opposition to the Office of Technology Assessment (OTA) revives concerns raised when this office was first proposed. Then, as now, members of Congress were concerned that the OTA might duplicate functions of other agencies. Although the original concept of technology assessment came out of a desire to better control negative technological impacts on the environment, the most important factor in establishing the OTA was a desire on the part of Congress for technical advice independent of the executive branch. Accordingly, Congress has retained rather tight control, making the OTA more of an information agency that responds to congressional requests than an independent early-warning or technology-monitoring mechanism. As a review of its historical development can indicate, further limitations imposed on the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

agency would undermine the last vestiges the original assessment concept, whereas eliminating the office would have implications for future executive-legislative relations.

As part of the larger aims outlined in their *Contract With America*, Republican leaders have announced their intention to eliminate the Congressional Office of Technology Assessment (OTA). In order to reduce expenditures and streamline the federal government, the Senate Republican Policy Committee has favored eliminating the office, arguing that “a lot of [its] duties could probably be picked up by the Congressional Research Service.”² But this threat is not new, and the issues presented by current OTA critics are strikingly similar to concerns voiced in the late 1960s and early 1970s, when it was first being proposed. Responses to the early concerns have been crucial to the office’s subsequent history and even limit the ways in which it can now respond to the same charges raised anew.

Origins of the OTA

The OTA was established by an act of Congress and signed into law by President Nixon in October 1972, but its history has deeper roots. The idea for the organization emerged in



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

a period of technological revisionism characterized by the Supersonic Transport (SST) and Anti-Ballistic Missile (ABM) controversies and the closely related burgeoning environmental concerns of the 1960s and 1970s. While the office is often discussed in that context, its origins are also deeply enmeshed in tensions between the executive and legislative branches of the Federal government. In response to the problem of managing an increasing science and technology budget and the attendant difficulties of legislative oversight of scientific and technically ensconced executive agencies, members of Congress began calling for better technical advice in the early 1960s.

By 1962, Congress had begun to take action to improve the information it received by enacting statutory changes in the Office of Science and Technology in the Executive Office of the president to make the president's science adviser more accessible to the Congress. But the feeling persisted that Congress needed more and better advice. This perception became especially acute in the House Committee on Science and Astronautics—a committee whose tasks had increased considerably in significance and scope with President Kennedy's pledge on May 25, 1961, to land a man on the moon by the decade's end. The committee chairman, California Democrat George Miller, expressed his concern over Congress's lack of ability to evaluate matters of scientific and technical complexity. In what would become a recurring theme during the 1960s, Miller remarked:



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

We are concerned with whether or not hasty decisions are handed down to us, but one of our difficulties is how to evaluate these decisions. We have to take a great deal on faith. We are not scientists...[but] I want to say that in our system of government we have our responsibility. We are not the rubber stamps of the administrative branch of government...[W]e recognize our responsibility to the people and the necessity for making some independent judgments...[but] we do not particularly have the facilities nor the resources that the executive department of government has.³

This concern was shared by members on both sides of the aisle. Miller's remarks were immediately followed by those of Representative James G. Fulton of Pennsylvania, a Republican. Fulton commented on the shortcomings of relying on the Bureau of the Budget, which is part of the executive branch, for information, remarking that "there is a defect...there is no scientific evaluation or judgement put to it, as between programs or the worthiness of a particular program...we do need good advice."⁴

With an eye toward strengthening the Congress's scientific oversight of federal science and technology initiatives and to more "effectively choose and implement research and development policy," the Committee on Science and Astronautics established a subcom-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

mittee on Science, Research, and Development under the chairmanship of Representative Emilio Daddario, Democrat from Connecticut. The new subcommittee was commissioned to determine what kind of advice Congress required “in order to oversee programs effectively and to legislate in a knowledgeable manner” and to investigate “the available sources of science advice to the Congress and how may those be used effectively.”⁵ To that end, beginning in October 1963, the Daddario subcommittee held hearings at which prominent scientists and government officials testified.

The first person to appear before the subcommittee was Dr. Frederick Seitz, President of the National Academy of Sciences. Daddario’s opening remarks indicated the concern felt in Congress regarding the imbalance of technical advice available to the different branches of government. As he remarked to Seitz, “it is obvious that from the very beginning the National Academy of Sciences has had a close relationship with the executive branch, and yet this has not been so with the Congress.”⁶

In response to this desire for better advice, as early as 1963, members of Congress introduced legislation directed at strengthening congressional capabilities in science and technology, emphasizing the need to do so in light of the executive branch advantages. Having addressed the Senate in July, 1963, Senator Edward L. Bartlett, Democrat from Alaska, introduced a bill on August 13 to “establish in the legislative branch of the Gov-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ernment a Congressional Office of Science and Technology.” Although the bill was referred to committee and never brought to the floor, Bartlett’s comments were illustrative of widespread concern. “The scientific revolution proceeds faster and faster...and the President, in requesting authority for these vast scientific programs undertaken by the Government,...has available to him the full advice and counsel of the scientific community.”

But Congress has no such help...no source of independent scientific wisdom and advice. Far too often congressional committees for expert advice rely upon the testimony of the very scientists who have conceived the program, the very scientists who will spend the money if the program is authorized and appropriated for.

For Bartlett, the conclusion was that “Congress as a body must equip itself to legislate on technological matters with coherence and comprehension.”⁸

Members of Congress also repeatedly pointed to their disadvantage as not being formally trained in the sciences. For instance, the ranking Republican of the Science, Research and Development Subcommittee, Charles Mosher, noted in a 1966 interview, “It’s obvious that we are in a different position from the members of most committees [who]

Cont’d...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

are dealing with subjects on which the whole human race has had some experience.” Indeed, with reference to fellow committee member, Michigan Democrat, Weston Vivian, a PhD scientist, he noted how “Dr. Vivian, with his engineering background, is the exception to the rule; the manner in which he has been able to probe the expert witnesses has been a revelation to me.⁹

This desire to equip the Congress to defend against the executive branch advantages set the Science, Research and Development subcommittee agenda through the mid-1960s. In the initial set of hearings held by the committee, Presidential Science Adviser Jerome Wiesner pointed to the need for Congress to improve its scientific and technical advice capabilities, specifically comparing the congressional resources with those available to the president: “I think we have exceeded the congressional ability to deal with what the executive is doing and I think this is something you may well want to deal with in this study of yours.” Chairman Daddario was receptive to Wiesner’s remarks and assured him that his committee would look into the need for a mechanism for improving the Congress’s capabilities for science and technical advice.

From these first hearings forward, the idea of a separate mechanism for advising Congress became a focal point in subcommittee activities. Among the most critical factors governing the subcommittee approach to this issue were the conclusions ex-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

pressed in a staff study completed in 1964, aptly entitled, “Scientific and Technical Advice for the Congress: Needs and Sources.”¹⁰ The report noted in its opening paragraph that “Congress in the past few years has become increasingly concerned with the problem of obtaining adequate information and advice on subjects of a scientific or technical nature.” Then, reiterating others’ concerns, it went on to observe that one of the primary justifications driving this issue was the fact that an increasingly large percentage of the federal budget was going toward the funding of research and development.¹¹ The issue of tension between the legislative and executive branches forms a strong undertone to the study. In their initial efforts to assess the matter, for example, “it became clear that one important aspect of the congressional advice problem centered about the relative merits of setting up some body of highly trained scientists or technicians to be *responsive primarily, if not solely, to the Congress.*”¹² Although the study found no consensus regarding what type of advisory system should be established, it is clear from their findings that the need to set up some mechanism, independent of the executive branch, was of paramount importance.

Rather than recommending establishment of a new agency, however, the study recommended better utilization of existing resources such as the National Academy of Sciences and the newly established National Academy of Engineering, strengthening committee



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

staffs and the Legislative Reference Service through the addition of technically trained people, and continuing to survey the congressional committees regarding their need for advice. Although no bold action regarding the advice issue was taken at that time, the issue did not disappear. But at this juncture, another area of concern became critical. Reflecting wider trends prevailing in the United States, Daddario and the subcommittee became increasingly concerned with the relationship between technology and the environment. It was from these concerns that the original concept of “technology assessment” (TA) emerged.

Indeed, in its next major report, TA became a primary concern of Daddario’s subcommittee.¹³ This concept, although related to efforts of improving advice for the Congress, has its origins in the particular interests of the subcommittee’s chairman. It seems clear that there was more on Daddario’s mind, and indeed more to the subcommittee’s mandate, than merely improving scientific and technical advice available to Congress. In addition to being established for the purpose of coordinating scientific and technical information for the Congress, the Subcommittee on Science, Research and Development was created to take a greater role in directing scientific and technological development. Indeed, in the Subcommittee’s first report, “A Statement of Purpose” from 1963, Chairman Daddario had outlined his view of the subcommittee’s role:



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

For 150 years the United States could and did depend mainly on ingenuity, industry, independence and pioneering of its people...Then the situation...shifted radically...the new need was technology. But Congress...finds itself squarely faced with the many social, political, and economic side effects created by the current technological revolution...Congress has long promoted science [but]...inevitably serious problems have accompanied progress... Indeed there are those who contend that the galloping technical revolution is threatening to outrun the number of talented people necessary to nourish it, as well as the time needed to plan and direct its course with some degree of wisdom.¹⁴

Thus, from the beginning, Daddario was interested in moderating or directing the technological revolution. The evolution of the subcommittee's agenda from coordinating information for Congress to assessing the impact of technology reflected Daddario's concern with technology as a force that needed more conscious management.

Daddario, however, cannot be characterized as a Luddite swept up in a growing anti-technology movement of the 1960s. Rather, he viewed the greater use of science and application of technology as essential. If anything, he seems to have been more amenable



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

to the idea of the technical fix than to impeding technological development. Support for science was necessary, Daddario maintained, because “new and fundamental knowledge must be obtained in all fields of science if we are to make any real progress towards a better life for our citizens.”¹⁵ He was, however, becoming increasingly concerned with the negative side effects of technological progress, and in particular the deteriorating environment.

This concern prompted Daddario to lead his subcommittee into an exploration of the possibility of a TA mechanism for the Congress, an idea first announced in 1966.¹⁶ After several hearings and commissioned reports, legislation was ready in 1970. Daddario introduced H.R. 17046 on the floor of the House in April 1970:

Mr. Speaker, probably the greatest single force for both good and evil which is abroad in the land today is technology. In large part the destiny of the human race depends on what we choose to make of science and its handmaiden, technology. This is not just an isolated opinion. It is shared by an overwhelming majority of the most thoughtful and best educated people in this Nation.

Then, having stated that the worth of technology depends on “how men handle it,” he went on to describe its impact. “There is scarcely a major existing ill which cannot in

Cont’d...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

some manner be traced to technological application,” he argued, and then added, “nor is there one whose solution does not lie, at least in part, with better managed and better used technology.” Arguing for the need for TA to better manage technology and the environment, he continued, “The most glaring example at the moment is environment....Until we learn really to understand technology—how and when to apply it; how and when not to apply it—we shall never overcome the many, complex difficulties that beset us.”

Daddario went on to define TA as ‘the evaluation of the impact of existing, new and developing technologies upon society...to assess both the desirable and the undesirable consequences of such technology...In other words...to give us better mechanisms for anticipating short- and long-range potentials of technology—good and bad.’¹⁷

Although introduced in 1970, the TA bill did not secure approval of the Rules Committee until 1972 and, in the meantime, the committee worked further to refine the measure. The bill’s path proved to be rocky as suspicion of, and charges against, the idea of TA became more formidable. Signs of this reaction were evident in the early committee hearings.

The element of governmental power and control over private industry, apparently inherent in a TA capability, was not universally applauded. Larry E. Ruff, a professor of economics at the University of California at San Diego, provided some of the most



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

disconcerting testimony the subcommittee was to hear. An unabashed believer in the power of the market to deal with technological problems, Ruff was suspicious of the “micromanaging” nature of the idea of TA. Ruff could not “let pass unchallenged the assumption that TA of the type described above is a useful or even a harmless exercise, or is, indeed possible.”

For him, “The world, and especially human societies, are just too complex and interrelated for anyone, or any committee, to determine the direct and derivative effects of technology, even in the past.” According to Ruff, “to solve our environmental problems we do not need expert assessments or estimates of this type. Rather...you should work on providing what is lacking—the market...by making each polluter pay a fee.”¹⁸

Ruff’s statement was symptomatic of a growing hostility to TA based on the perception that what it really meant was the regulation of technology. Critics of governmental interference in the innovative process began deriding the concept as “technology arrestment” and “technology harassment.” Champions of unfettered technological innovation, especially leaders from industry, feared “harassment by hysterical (and hardly democratic) scientific Philistine, principally from the sinister side of the political spectrum,” while some even went so far as to claim that “TA can subvert the principles at the very heart of democracy.”¹⁹



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Daddario responded rather vehemently to the suggestion that TA was to be the nit-picking regulatory activity that Ruff and others portrayed. Sensitive to charges that TA was really regulation in disguise, Daddario emphasized the value in the information it would provide Congress:

I would think that one of the problems we are having here is that you see assessment as another form of rule and regulation, which, if you were to examine the assessment studies that have been made and the thoughts about it by the committee, is exactly what we do not intend to do....The Congress must have the ability to recognize what the implications are of complicated and scientific and technical ventures in order to be able to develop a program which can be an effective one.

It [the committee] has not said that it is going to regulate every gadget that comes down, but rather look into the very complicated mechanisms which are involved in congressional programs for the purpose of being able to make an assessment of how these programs can work better than they have in the past.²⁰

Thus, Daddario and his colleagues, wary of conveying the impression that TA was regulation, began focusing instead on the information value of an independent technology

Cont'd...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

assessment organization for Congress.

In late May 1970, during the final set of hearings to solicit testimony for the legislation, Missouri Democrat James Symington in his opening statement placed the proposed OTA in the middle of the executive-legislative power struggle.

There is a bill before the Congress today which was drafted and introduced by Chairman Daddario of this subcommittee, along with Mr. Mosher...which would establish an Office of TA serving the Congress...because clearly we, as an institution, that is, the Congress, have been gravely uninformed and have lacked sufficient guidance to make really useful and wise decisions in this field in the past. We have tended simply to accede to administration initiatives, which themselves from time to time may have been hastily or inaccurately promoted.²¹

Daddario, too, began highlighting this aspect of a TA body, arguing that the proposed OTA would address the need for independent advice, as well as environmental issues. He then emphasized the role that the OTA would play in redressing the imbalance of federal powers. In his most forceful language on the topic to date, perhaps getting ready for the legislative battle in the House, he stated,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Since 1963, a large portion of the Subcommittee efforts have been to develop avenues of information and advice for the Congress with outside groups. We have recognized the important need for developing independent means of obtaining necessary and relevant technical information for the Congress, without having to depend almost solely on the Executive Branch. In my view, it is only with this capability that Congress can assure its role as an equal branch in our Federal structure.²²

Establishing the OTA

The House Rules Committee finally cleared the bill for consideration in early 1972. Renamed H.R. 10243, debate began in the House on February 8, 1972. Although the champions of the TA concept had to continue to deal with the specter of regulation in the course of committeework, a new objection emerged. Wary of surrendering power to a new external organization, members of Congress, traditionally jealous in matters of jurisdiction, feared that the proposed office might infringe upon their authority. Representative Delbert Latta, a conservative Ohio Republican and member of the Rules Committee, immediately questioned the policy-making powers of the office, remarking,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

the report reads as follows: “The Office would be composed of a policymaking body called the TA Board.” Really “policymaking body” is a poor choice of words, as actually it is not going to be a policymaking body in the real sense of the word, but it is only going to be permitted to make its own rules. It is going to work for this Congress and not be making policy for it.²³

The new chairman of the Science, Research and Development subcommittee, Georgia Democrat John Davis, who had taken over responsibility for the legislation after Daddario left the House to run, unsuccessfully, for Governor of Connecticut, quickly reassured Latta and the assembled body:

I agree with the gentleman from Ohio. He is absolutely correct. Perhaps “policymaking” was an unhappy choice of words. Certainly it is not contemplated the Office of TA would have any policymaking powers whatsoever with respect to Congress.

Then beginning the general debate, Davis quickly placed the OTA in the role of redressing the imbalance between branches: “It is important to note that the bill is designed to provide informational aid for the Congress, not for the executive branch. The OTA



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

would be at the disposal of any committee of the Congress, but it would not,” he reassured the members, “assume any congressional function—oversight, investigative, or otherwise. It would function entirely in a supplemental fashion.”

Speaking from the Republican side, Charles Mosher of Ohio, the ranking minority member on the Science, Research and Development subcommittee, argued for the office claiming it was essential to buttress the Congress’s position:

Too often, we in the Congress are flying blind—or at least much more in the dark than is necessary or good—to the extent that we do not obtain better information and advice than we now have so as to be more sure of what we are actually doing when we make decisions which involve the use of new technology.

Referring to the deficiencies of Congress, he implored,

Let us face it Mr. Chairman, we in the Congress are constantly outmanned and outgunned by the expertise of the executive agencies. We desperately need a stronger source of professional advice and information, more immediately and



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

entirely responsible to us and responsive to the demands of our own committees, in order to more nearly match those resources in the executive agencies.

Mosher went on to explain that the OTA, unlike the Library of Congress, would not be subject to individual member requests but only to committee requests because “the studies and reports contracted by the OTA will usually be of a much larger, more comprehensive scope, applying major technology decisions that are before a committee.” He then brought up the matter of its autonomy and explained that the Office of Technology Assessment will “perform only staff work for the Congress” and “will not be a decisionmaking body, nor a policymaking body.” “The OTA shall solely be a servant of the Congress; its fundamental function will be to supply us with much more comprehensive, accurate, significant, technical advice and information than is now available to us. It will be created solely to help us do a better job.”²⁴

Others who endorsed the bill agreed “that without this kind of assistance, the Congress is going to find itself in the course of time unable to deal with its constitutional responsibilities, and, therefore, it is going to experience a continual erosion of its constitutional authority.”²⁵

Some Republican members were leery of the price tag. One was Representative Larry



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Winn of Kansas, who in the 1970 hearings had expressed his belief in “the great benefit of this piece of legislation,” but argued, “I am trying to get the job done and save five million dollars in some way.” Similarly, Winn’s fellow Republican James Fulton of Pennsylvania had wondered “what the savings might be” if the Library of Congress’s Legislative Reference Service [now Congressional Research Service] could assume the duties of the proposed OTA.²⁶ These concerns, reflective of critiques being raised today by those who wish to eliminate the OTA, resurfaced in the debate on the bill in 1972.

Iowa Republican H.R. Gross, enjoying a reputation for great frugality during his 26-year tenure and being a member who “made just about every bill manager with a request for federal funds study his bill a little more carefully,”²⁷ suspected a waste of money: “Mr. Chairman, to hear this bill explained, one would think that the millennium had been achieved or we are on the threshold of the millennium; that the creation of a new board in Government is going to save I do not know how many billions of dollars.”

If it would really save money he said he would favor it. “But,” he argued, “this is going to add one more boondoggling board to what we already have.” Gross questioned whether it would be better to “turn over to the General Accounting Office this TA, and let them hire the few people that would be needed? Why create another board in Government?”²⁸

Gross was not alone; the spirit of fiscal restraint moved other members as well. Fellow



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Republican John H. Roussetot of California agreed with Gross's complaint: "Somehow the Members of this Congress should begin to come to grips with the problem of controlling this massive expanding bureaucracy that grows all around us here in Washington." He then asked Davis "if it is not possible to give more adequate staffing to our present congressional space committee that we have right here in the House."²⁹

These comments prompted Davis to rejoin,

The Jurisdiction of the Committee on Science and Astronautics is primarily science and astronautics. The problems that technology poses to our society include problems which affect every committee of the Congress on either side of the Capitol. The fact that you might try to put all of this in the Committee on Science and Astronautics would pose any number of problems which would involve the jurisdictions of the Committee on Interstate and Foreign Commerce, the Committee on Agriculture, or almost any other committee you might want to name.³⁰

The OTA did not become a completely partisan issue, however. Marvin Esch of Michigan, a moderate Republican and a supportive member of the subcommittee, gave a strong endorsement for the OTA, drawing on both themes: the need to better manage technology

Cont'd...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and the executive-legislative issue.

Then referring specifically to the proposed OTA, Esch stressed, “It should be emphasized that these are informational functions; not functions of control, or even recommendation. These functions are designed to supplement existing systems of acquiring information, such as the hearing system.” And he reiterated, hoping to forestall charges of encroachment on congressional authority, “I emphasize again that the Office of TA is not intended to make recommendations as to what course the Congress should follow, nor to predetermine any issues.”³¹

Earlier in the debate Mosher had attempted to address the notion that existing agencies could perform TA. Attempting to quell such a notion, he reasoned,

Today, there is strong, competent staff help for many of the congressional committees. But I submit that our present staffing does not even pretend to provide, nor could today’s staffs provide, the comprehensive systems analysis assessments of complex technologies, and their consequences, which we are proposing in this legislation, and for which there is a vital need.

Then, in remarks which call to mind the most recent arguments against the OTA, he went on to note, “Also, let us clearly recognize that the Congressional Research Service

Cont’d...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

in the Library of Congress does not and will not provide the assessment services we are proposing in this bill.”³²

For Mosher it was “very important to recognize that the Office of TA, as proposed in this bill, will be strictly supplemental to the services performed for us by the Congressional Research Service and the General Accounting Office [GAO].” He stressed that, in comparison with existing agencies, the proposed OTA would be “analogous to the GAO and the Library’s Research Service, only in that it will be distinctly an arm of the Congress alone, an instrument for the Congress alone to use, and responsible only to the Congress.”

“Of course,” he assured his colleagues,

we considered carefully whether this TA function should be placed in the already existing GAO or Congressional Research Service, and the evidence was convincing that it should not be. To be effective it should be separate. GAO makes its examinations after the fact, after the water is over the dam. The essence of our bills is to anticipate far more accurately in advance the consequences of our decisions here. And even though the Congressional Library has great competence in many respects, it does not have the type of competence,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

nor traditionally the thrust, the interests and attitudes intended by this new legislation.³³

As its champions had presented it, the OTA would assist congressional oversight, help Congress save money, yet remain responsive, responsible, and accountable to the Congress. But Texas Democrat Jack Brooks wanted to be sure of this. He proposed an amendment to bring the office under tighter congressional control. As the last order of business before voting on the bill, the House took up Brooks' amendment; his argument suggests that without the emphasis on TA for Congress versus the executive branch, this bill would not have passed. Congressmen such as Brooks were receptive to advice for Congress, but if and only if it were strictly under the arm of the legislative branch, and his remarks make this abundantly clear.

“This bill provides for the executive branch to run and control this office,” Brooks asserted. According to the original bill, the president was to appoint four public members to the TA Board (TAB), which was to directly oversee the office and appoint the director. The Congress was also to contribute four members: two from the Senate and two from the House. But with the president having control over the four public members as well as the director of the CRS and the Comptroller General,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Brooks felt that with a total of six on the board under his influence, the office was clearly going to be controlled by the president. He deduced, “So the President then in effect picks out this Director and that gives him 7 to 4. Now, you do not have to be very good to run an agency of that kind when you have got 7 to 4.”

Brooks then offered his alternative of a TAB consisting of five members from each house, three from the majority party and two from the minority, who would then select the director, “and that agency,” he insisted, “will then be responsive to the U.S. Congress, not to the Executive.” He concluded his proposal by saying, “I say that we would be wise if we are going to spend enough money to have 50 or 60 or 70 experts that we, the Congress of the United States, are going to name them.”³⁴

Apparently, the assembled members were persuaded as they approved the amendment that changed the makeup of the TA Board from one comprised of four congressmen, the Comptroller General, the head of the CRS, four public members appointed by the president, and the director to a new configuration consisting completely of congressmen. The House then approved the amended bill on a roll call vote of 256–118, with Democrats clearly favoring the bill 180–39, while Republicans were split 76–79. The Senate passed the bill on a voice vote and President Nixon signed the bill into law on October 13, 1972.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Congressional Control Over the Office

Having trouble finding office space, the OTA did not begin operations in earnest until early 1974. As a result of a compromise in a Committee of Conference with the Senate, the TAB was modified to 12 members of Congress, with six from each house and an equal three from each party. The TAB, comprised solely of congressmen, became in effect a bipartisan joint committee overseeing the office and its director. Recognized within Congress as the “father” of the TA concept, Daddario’s appointment as the OTA’s first director came as a surprise to no one.

Because input of leaders from the scientific and technical communities was critical to the original concept of TA it was also agreed in Conference that advice from experts outside of government would be provided by a newly devised TA Advisory Council (TAAC). The relationship between the TAB and the TAAC did not prove to be one of an equal partnership, however. The TAB, comprised of congressmen, continued to view the OTA as a repository of independent information untainted by the executive branch. Thus, rather than allowing the OTA to launch into a bold new intellectual and governmental adventure, the TAB kept tight reins on the OTA from the beginning.

Recalling the jealousy over potential policy making by the OTA expressed during the floor debate, the TAB immediately limited the TAAC’s role. It became clear from the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

outset that securing public input for choosing assessment topics and thus influencing the nation's technology policy was to be secondary to the primary role of the OTA: providing objective information for congressional committees. In the first joint meeting of the TAB and TAAC, congressional control became apparent. After the members of the TAAC began discussing various ideas, including improving environmental policy, Mosher, serving as the first Vice-Chairman of the TAB, cut them back:

Apropos of what you gentlemen are saying...I hope we are all aware of one fundamental fact on TA and, in fact the Advisory Council, that neither of these bodies is in itself considered to be a policy-making body. I hope we all understand that. The Congress would immediately rebel if there is any indication that the Office of TA is going to be making policy decisions...We are only aides to the Congress and to the legislative process...we are going to have to be extremely careful in the assessment jobs we take on.³⁵

It became clear that the office was not to make policy and that the TAAC was not to be responsible for coming up with ideas for TAs, but was rather to serve as “a sounding board for advice” on topics culled from congressional committees. Instead of canvassing the TAAC for ideas, the first item of business was a survey of congressional staffs to get

Cont'd...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

“an idea of their priorities for legislation.” Republican TAB member, Senator Clifford Case, was quite concerned that the office remain responsive to Congress by keeping committees informed on the status of their requests for assessments.³⁶ For those who had held high hopes of the OTA providing a channel for public input into technology policy, early developments were not promising. Rather than serving as a “monitoring”: and “early warning” agent to alert Congress to adverse technological developments, as Daddario had originally envisioned the concept, request for specific TAs were coming from Congress itself and the office’s main order of business shortly became providing technical advice as requested, *ad hoc*, by members of Congress. But even in this capacity of offering supportive, if subservient, advice on topics already chosen, the TAAC’s role was quickly reduced. In fact, the TAB precluded its input into the selection of the very first assessment.

The first report the office undertook was a study on the viability of generic drugs. The process through which the TAB approved this study was an inauspicious beginning for those who had been resting their hopes on the OTA as a conduit for public input into technology policy. The TAB’s first chairman, Senator Edward Kennedy, proposed the study in order to help his Health and Scientific Research subcommittee in the Senate resolve an argument between drug manufacturers and administration experts who had



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

provided contradictory testimony regarding whether or not alternative, generic drugs could in fact be produced. The original plan had been to wait for TAAC's input into proposed TAs before approving them, but when Daddario informed the group that the TAAC was not scheduled to meet for another month, Kennedy and the others were reluctant to wait. Senator Ernest Hollings, a South Carolina Democrat, became the most adamant. "It's ridiculous," he exclaimed. Why are we waiting on all this staff stuff...why don't we approve of that and just get going?"³⁷ Daddario, anxious to get under way and placate his congressional bosses, accommodated the board, "Senator, so far as the advisory committee is concerned, I don't think we ought to wait before going ahead."³⁸

In contrast to the quickly diminishing association with the TAAC, relationships with congressional committees and their staffs were nurtured and their inputs and received a different priority. At the very next meeting, Daddario responded to an inquiry from Senator Case in this regard, assuring him that

participation in the assessment process by the interested congressional staffs...is an integral part of the activity...[and] there will be a constant involvement not only at the congressional level but at the staff levels in these, so



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

that there can be a direct relationship to committee activities, committee hearings and the like.³⁹

This marginalization of the TAAC led to the resignation of its chair man, Harold Brown, then the President of the California Institute of Technology, in 1975. And although promises of improving public input were made, the reality never corresponded to the original TA concept, *i.e.*, that leaders from the scientific and technological communities would keep “tabs” on technological developments and make assessments as to whether or not such technologies should be pursued. Instead, right from the beginning, the OTA was tightly reined in by its congressional overseers. Rather than assessing the consequences of alternative paths of technological development, parity of information among branches of government remained a main concern. In this context, at one of the first TAB meetings, Senator Hubert Humphrey saw the value of the OTA as placing the Congress “in a position to at least give the executive branch, as it comes up with a program, some healthy competition of ideas.”⁴⁰ Similarly, the office was defended on those grounds in front of the Appropriations Committee by Kennedy:

The purpose of the Office is to provide Congress with its own technical expertise.... Over the past two decades the executive branch’s capability in science

Cont’d...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and technology has grown immensely, while the ability of Congress to evaluate such programs has stumbled along at a snail's pace.

Drawing the office into the power struggle exacerbated by Watergate, he averred,

Mr. Chairman I believe that recent events have indicated to members of both houses the need to strengthen the Congress to meet its responsibilities, now and in the decades ahead. The Office of TA is a vital resource to assist Congress in achieving that goal.⁴¹

In its early years, the office evolved into an on-demand advice mechanism for Congress as opposed to developing into a more autonomous agent for contributing to a coherent technology policy. Originally, TA was to provide expert input from the outside in order to inform policy making. With the TAB in control, however, topics for TA in the OTA were picked by “insiders” and outside experts were consulted only in a *post hoc* manner. They were asked to provide input on topics that had already been decided by congressional committee chairmen and the congressmen on the board.

Thus stripped of its autonomy and managed in its formative years by Daddario, who had to remain sensitive to congressional committee chairmen in the TAB and in Congress

Cont'd...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

at large, the OTA's purview remained limited. Although OTA produced studies that were acclaimed for their objectivity and balance, they were not nearly as far-ranging as the original advocates of "assessment" had hoped. In fact, they did not come close to resembling the broad monitoring function that the early plans for the office had envisioned.

In 1977 Daddario resigned as OTA director and was eventually succeeded by Russell Petersen, a former Governor of Delaware. Under its second director, OTA tried to branch out and assume a more assertive role and was nearly eliminated. Petersen, an active environmentalist, tried to move the OTA back toward the concept and make the office a policy informing organization bringing facts and ideas to the Congress from the outside. As one of his first orders of business, Petersen developed a "priorities list" of prospective assessment topics. But seeking greater autonomy for the office did not sit well with his congressional overseers, and his tenure proved to be brief, lasting scarcely a year.⁴²

After Petersen departed to head the National Audubon Society John Gibbons, a respected physicist at Oak Ridge National Laboratory and former head of the Energy, Environment and Resources Center at the University of Tennessee in Knoxville, was brought in for what many on the inside realized was OTA's last chance.⁴³ Taking over in 1979, Gibbons achieved gains in bureaucratic reform, such as ending cost overruns, but more importantly, he brought the office back into the role of unbiased servant of Congress



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and away from the Petersen plan of a more independent policy input. Under Gibbons the office increased its reputation as a competent, loyal and responsive information agency for Congress, as evidenced by a newly implemented “annual survey of committee needs.”⁴⁴ Emphasizing “advice on tap,” Gibbons won praise for his stabilization of the office, directing it not towards advocacy but toward reliable information source for Capitol Hill during his 14-year tenure.

One brief controversy illustrates the difficulties that TA would engender if the office tried to “assess” rather than just provide objective information on contentious issues. In 1984, the “Star Wars” debate injected the OTA into the center of a scientific-technical controversy similar to the ABM and SST struggles.

In the ABM and SST affairs, expert opinions were believed to be tainted.⁴⁵ Suspicions were confirmed when President Nixon abolished the Presidential Science Advisory Committee in January, 1973. Nixon had become upset with what he perceived as insubordination to the Administration’s proABM and proSST positions by advisers who opposed the programs before Congress. During the Reagan Administration, the Strategic Defense Initiative, or “Star Wars” missile defense issue arose in an almost identical manner as the ABM controversy. Not only was the technology at issue similar, *i.e.*, missile defense systems, but, not surprisingly, the same kinds of political issues emerged: the prevailing



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

balance of powers, violation of treaties, and the question of whether the project was in fact technically and economically feasible. Here, as did the science advisers under Nixon, the OTA came out against the administration's position.⁴⁶ The OTA itself became a partisan issue that year when the administration charged that the office exposed sensitive defense secrets.

The charges did not hold up, and the OTA overcame this scare.⁴⁷

Subsequently, however, it largely steered clear of contentious issues and assumed its role more as a low-profile respondent to congressional requests under Gibbons, who remained at the OTA until 1993. After Gibbons was named Science Advisor to President Clinton, Roger Herdman, a former Vice President of the Sloan-Kettering Cancer Center, took over the reins at the OTA. Continuing the pattern established by Gibbons, the office has been enjoying a reputation as a provider of widely recognized high-quality, if less controversial, studies.

Although the OTA has moved away from the proactive approach envisioned by early champions of TA, it has nevertheless evolved in a way very much in accord with the expressed desires of those on Capitol Hill. In so doing, it has kept out of controversy or even advocacy, but now, precisely because of its responsiveness to Congress and a less far-ranging approach, the criticism that its duties can be performed by another agency has



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

resurfaced. Twenty-five years ago, officials at the CRS, then called the Legislative Reference Service (LRS), were asked if LRS or the GAO could perform technology assessment. In light of current concerns, it is worthwhile to examine their responses.

During the committee hearings setting up OTA, the director of the LRS, Lester Jayson, foresaw cost advantages in locating the entire TA function within the Library of Congress which housed the LRS. He believed that the LRS had the necessary experience in that “studies of specific technologies and their impacts on society are routinely performed by LRS as a part of its fiction of advising the Congress on scientific and technological matters.” He also noted the GAO had also “conducted reviews and analyses” similar to that of TA, and thus, he believed, “either agency or both could reasonably serve as repository for the proposed expanded function of TA.”

Savings to the overall federal budget could be achieved, he felt, through reducing overhead costs such as building, equipment, and administration by utilizing one staff instead of two, particularly insofar as senior staff were concerned. He summarized these types of cost advantages with the simple formula, “two agencies require more support than one.”⁴⁸

Although he believed at the time that the LRS “would need still further enlargement to carry out the additional functions of contract administration implicit in an OTA operation



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

as we understand it,” he did feel that staff expansion in the Library of Congress was feasible by building on “the present LRS team of specialists as the nucleus of an organization.” This was possible, he reasoned, because this group was “already familiar with the broad scope of subject matter,” and thus “provides something substantial to build on.”⁴⁹

But Jayson also acknowledged some disadvantages of incorporating TA into the LRS: “It should be pointed out, however, that the prospect of assigning complete TA function to LRS would not be without serious costs and disadvantages.” He cited that,

any assessment of serious portent is sure to be controversial. LRS has no history of having to survive public exposure of its assessments. It has not had to be accountable to the public. It has no experience in having to defend itself against interests that would endeavor to modify or suppress studies...LRS has not provided testimony, made substantive recommendations as to priorities or criticized the Executive Agencies before Congressional Committees.⁵⁰

Bearing in mind the “great increase in public exposure of LRS,” Jayson worried that “on matters of great moment, high economic impact, and intense emotional feeling bias will be imputed to the most objective of statements.” In his opinion, any agency thrown into such a mix “must command respect, enjoy durable public support, and operate under

Cont’d...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

the protection of insulation from powerful dissident factions and their political supporters.” He quickly added, “No agency of government possesses all these attributes.” He closed,

Conceivably, the LOC—specifically, the LRS—by the exercise of discretion in its choice of initial tasks, reliance on its established reputation for objectivity, and selection of additional personnel of highest professional prestige and qualifications, could achieve a solid credibility for its output.⁵¹

When a TA mechanism was first considered, it seemed apparent in light of issues like the ABM and SST controversies, that it would be thrust into the midst of contentious issues. As it has evolved, however, the OTA has been received most favorably by its congressional bosses when it has avoided positions of advocacy and served, instead, as a less politically charged information source for congressional committees. Therefore, it seems that the drawbacks cited against injecting a potentially politically controversial organization into the Congressional Research Service no longer seem relevant.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Dilemma for the OTA

This is the crux of OTA's ongoing problem: In order to earn a reputation for being unbiased, it has had to dodge controversies, into which, 25 years ago it seemed the OTA would be thrown, but in not being so involved, the OTA "risks becoming invisible."⁵² Moreover, since the OTA generally is not injected into such controversial issues and, indeed, has been historically criticized for that, Jayson's reasons as to why the LRS could not take on controversial issues now seem moot.⁵³ The noncontroversial posture of the OTA is not the result of timidity within the OTA, however, but results from the fact that the office was designed as an information source independent of the executive branch and "responsive and responsible to Congress" and has operated as such. It has had to be careful not to upstage Congress by attempting to make policy. And, as it was set up by Congress with the idea of shoring up the Legislative branch in the three branch system, information for, and responsiveness to, Congress became the primary force in its formative period. Thus, the congressional overseers on the TAB have chosen the assessments. But this status and role as information agent places the OTA in a difficult position. As it has become a more information-oriented agency, as opposed to a policy advocate "assessing" alternatives, it now more closely resembles the CRS than it did in its hypothetical stage 25 years ago. This has left the office in a difficult position when faced, as it is now,



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

with fiscally-motivated plans to abolish it.

Pennsylvania Republican Robert Walker, the new chair of the House Science Committee, has announced that if the OTA is to remain, its studies must be more short-term and responsive to the appropriations process.⁵⁴ This, however, would completely abandon any remaining vestiges of the original TA idea still present in the OTA. Unlike the CRS, OTA studies remain of a more long-term nature. If, indeed, the desire is to make the OTA replicate the CRS, then the critics will have foreordained the OTA's elimination. There will be nothing left to separate OTA work from the kind of things CRS is commissioned to do. Moreover, transformed in this way, TA will have nothing in common with the idea as it was envisioned when the office was established. Although OTA has already considerably departed from the original idea, placing such time constraints on its work would be the end. If there is a problem with the office, it is not because it is an agency that is unresponsive to Congress; that hurdle has been crossed during the course of the OTA development. If Congress has a continued concern over its responsiveness, the timeliness of its studies, or the scale and scope of its reports, it arises as a result of the last traces of the original TA concept office's approach. If these traces are removed, there no longer appears to be a rationale for an office separate from the CRS.

Obviously, this presents the OTA with a problem in confronting a conservative Con-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

gress bent on reducing expenditures, as well as having an inclination to oppose anything smacking of industrial policy. In a classic Catch-22, the obvious defense of the office will likely lead to its demise.

On the one hand, if it claims to be more than an objective information agency, tending toward a more autonomous or assertive role with respect to technology policy, it would apparently be doomed in the face of Republican control of both houses. On the other hand, if it justifies itself solely as a provider of timely advice, as Republicans seemingly desire, then it is hard to argue that an office beyond the CRS is really necessary.

In terms of immediate outlook, the OTA's future likely depends on whether or not it can successfully persuade its congressional judges that the organizational capability it has achieved over the past two decades for providing technical advice will be hard to match. Historically, however, the OTA is best understood as a part of the broader congressional reforms of the 1970s, the most visible of which were the War Powers Act in 1973 and the creation of the Congressional Budget Office in 1974. This suggests that if the office is to prevail, its advocates should sell the office, as proponents did back in 1972, and argue that Congress needs a scientific and technical advice mechanism independent of the president that can only adequately be provided by the more long-term outlook of the OTA's studies.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

In addition to the individual fate of the OTA, a move to eliminate it may have broader historical ramifications. At its founding in 1972, the OTA was only the third independent congressional agency ever established. In many ways, it represented a bold move by Congress and the first step of the reformist 1970s—a period in which “Congressional politics had undergone considerable change” and a decade in which “Congress studied itself more...than at any time in its history.”⁵⁵ This scrutiny also led to reforms, but in order for reforms to occur, “conditions must be right, and the most important [condition] appears to be the perception among members that the institutional authority is threatened.”⁵⁶ Rather than a new foray into assessing technology, Congress established the OTA in order to shore up legislative branch powers. Although the War Powers Act and the Congressional Budget Office are, perhaps, more visible signs of the changes that took place in congressional–presidential relations in the 1970s, it seems clear from the history of the OTA that the underlying causes which gave rise to the institution place it firmly in this pattern. And, given its early beginnings, which predate the two above-named acts, the agitation for increasing Congress’s scientific and technical capability—and the resultant process that culminated in the OTA—place it at the beginning of this sea-change in legislative-executive relations.⁵⁷

Thus the question of eliminating the OTA becomes certainly not one of reducing



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

regulation, since the office never became the assertive policy influence favored by some, but one of cutting back one of the institutional reforms begun to countermand a perceived and very real encroachment on the legislature by “the imperial presidency.” And, in that case, the scaling back of OTA may have broader implications for the roles of the respective branches of government in the tripartite federal system.



*Gregory C. Kunkle is a PhD candidate in the Department of History at Lehigh University writing his dissertation on the Office of Technology Assessment. In addition to teaching courses in the history of technology and the interaction of science, technology, and society, Kunkle has recently written an article on the history of the electron microscope, which appears in *Technology and Culture* (Winter, 1995).*

Notes

1. *The New York Times* (December 6, 1994), p. A1; N. Gingrich, *Contract With America* (New York: Times Books, 1994).



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

2. Quoted in J. Mervis, "Technology Assessment Faces Ax," *Science* Vol. 266 (December 9, 1994), p. 1636.
3. United States Congress, House Committee on Science and Astronautics, "Panel on Science and Technology, Fifth Annual Meeting, Proceedings," U.S. 88th Congress, 1st Session (Washington, DC: U.S. Government Printing Office, 1963), p. 37.
4. *Ibid.*, p. 38.
5. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research, and Development, "A Statement of Purpose: The First Progress Report of the Subcommittee on Science, Research and Development," U.S. 88th Congress, 1st Session (Washington, DC: U.S. Government Printing Office, 1963), pp. 12–14.
6. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research, and Development, "Government and Science, No. 8: Hearings before the Subcommittee on Science Research and Development," U.S. 88th Congress, 1st Session (Washington, DC: U.S. Government Printing Office, 1963), p. 32.
7. 1963 is an important year. While in 1962 the NASA budget passed unanimously, in Spring of the next year, the first major opposition to the space program emerged because of the rapidly expanding NASA budget. Indeed, historian and former member of the Science and Astronautics Committee, K. Hechler, has termed this period the "end of the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Honeymoon.” U.S. Congress, House Committee on Science and Astronautics, K Hechler, “Toward the Endless Frontier,” U.S. 96th Congress, 2nd Session (Washington, DC: U.S. Government Printing Office, 1980), p. 124.

8. Senate, *Congressional Record* (August 13, 1963), pp. 14809-14810.

9. “The View From Congress,” *International Science and Technology* Vol. 57 (September 1966), p. 70.

10. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research, and Development, “Government and Science, No. 3, Scientific and Technical Advice for the Congress: Needs and Sources,” U.S. 88th Congress, 2nd Session (Washington, DC: U.S. Government Printing Office 1964).

11. The other reason cited was the “forceful impact of science and technology upon our contemporary civilization.” *Ibid.*, p. 1. 12. *Ibid.*, p. 3, emphasis added.

13. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research and Development, “Inquiries, Legislation, Policy Studies Re: Science and Technology: The Second Progress Report of the Subcommittee on Science, Research and Development,” U.S. 89th Congress, 2nd Session (Washington, DC: U.S. Government Printing Office, 1966).

14. United States Congress, “A Statement of Purpose,” *op. cit.* (1963), pp. 1-2.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

15. Daddario was consistently viewed by the scientific community as an ally, a perception due especially to his oversight of NSF and he worked hard at maintaining his reputation, earning him the informal title of “Mr. Science” in the House. United States Congress, K Hechler, “Toward the Endless Frontier,” *op. cit.* (1980) p. 147.

16. The idea was first mentioned in a committee report. United States Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research and Development, “Inquires, Legislation Policy Studies Regarding Science and Technology: The Second Progress Report of the Subcommittee on Science Research and Development,” U.S. 89th Congress, 2nd Session (Washington, DC: U.S. Government Printing Office 1966), pp. 27-28.

17. House, *Congressional Record* (April 16, 1970), p. 12110.

18. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research and Development, “Technology Assessment and the Environment: Hearings before the Subcommittee on Science, Research and Development,” U.S. 91st Congress, 2nd Session (Washington, DC: U.S. Government Printing Office, 1970), pp. 361-364

19. Leon Green of Lockheed Corporation and William O. Baker of Bell Laboratories, quoted in D. Medford, *Environmental Harassment or Technology Assessment* (New York:



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

- Elsevier, 1973), p. 52. 20. United States Congress, “Technology Assessment and the Environment,” *op. cit.* (1970), p. 372. 21: *Ibid.*, p. 794.
22. *Ibid.*, pp. 739-740.
 23. House, *Congressional Record* (February 8, 1972), p. 3201.
 24. *Ibid.*, p. 3203.
 25. *Ibid.*, p. 3208.
 26. U.S. Congress, House Committee on Science and Astronautics, Subcommittee on Science, Research and Development, “Technology Assessment Hearings on H.R. 17046,” U.S. 91st Congress, 2nd Session (Washington, DC: U.S. Government Printing Office 1970), p. 18,53.
 27. M. Barone, G. Ujifusa, and D. Matthews, *The Almanac of American Politics 1978* (New York: E.P. Dutton, 1977), p. 292. 28. House, *Congressional Record* (February 8, 1972), p. 3213.
 29. *Ibid.*, p. 3214.
 30. *Ibid.*, p. 3215.
 31. *Ibid.*, p. 3217.
 32. *Ibid.*, p. 3203. Notice, however, that in this context Mosher was talking about a more broad ranging, systems-analysis based technology assessment and not just an



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

independent advice mechanism. This distinction and its importance for the contemporary OTA will be addressed below.

33. *Ibid.*, p. 3203.

34. *Ibid.*, p. 3220.

35. The Office of Technology Assessment, “Minutes of the Joint TAB-TAAC Meeting,” (Washington, DC, January 24, 1974) pp. 40–41. 36. *Ibid.*, p. 59.

37. The Office of Technology Assessment, “Minutes of the Technology Assessment Board Meeting,” (Washington, DC, February 6, 1974), p. 75.

38. *Ibid.*, p. 51.

39. Office of Technology Assessment, “Minutes of Technology Assessment Board Meeting,” (Washington, DC, February 20, 1974), p. 5.

40. Office of Technology Assessment, “Minutes of Technology Assessment Board Meeting,” (Washington, DC, February 6, 1974), pp. 41-42.

41. Quoted in “Minutes of Technology Assessment Board Meeting” (March 6, 1974).

42. Office of Technology Assessment, “Minutes of Technology Assessment Board Meeting,” (Washington, DC, November 4, 1977 and January 31, 1979). Petersen also desired to increase input from citizens groups like the Sierra Club, R. Petersen, speech delivered on May 9, 1978, File #0238, Information Center, Office of Technology Assess-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ment, Washington, DC.

43. The OTA's troubles were compounded by political controversies surrounding Board Member Ted Kennedy who was charged with trying to appoint his long time assistant and Program Manager at the OTA Ellis Mottur, to the vacant directorship created by Daddario's departure. Thomas Southwick, "Hill Technology Assessment Office Hit by Controversy" Congressional Quarterly (June 18, 1977), pp. 1202-1203. The controversy subsided after Mottur withdrew from consideration and later resigned from the OTA. Office of Technology Assessment, "Minutes of Technology Assessment Board Meeting: (Washington, DC, May 8, 1978).

44. Office of Technology Assessment, "Minutes of Technology Assessment Board Meeting," (Washington, DC, September 12, 1979), p. 1.

45. See G. Herken, *Cardinal Choices: Presidential Science Advising from the Atomic Bomb to SDI* (New York: Oxford University Press, 1992), pp. 165-179. 46. "Minutes of Technology Assessment Board Meetings," (September 12, 1985). M. S. Warner, "Reassessing the Office of Technology Assessment," an unpublished paper prepared for The Heritage Foundation, provides a summary critical of the OTA's conduct. File #0240, Information Center, Office of Technology Assessment, Washington, DC.

47. "Minutes of Technology Assessment Board Meeting," (June 21, 1988).



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

48. United States Congress, "Technology Assessment Hearings on H.R. 17046," *op. cit.* (1970), p. 54. 49. *Ibid.*, p. 55.
50. E. Wenk quoted by Jayson, *Ibid.*, p. 55.
51. *Ibid.*, p. 56.
52. L. Branscomb quoted in Mervis, "Technology Assessment Faces Ax," *op. cit.*, p. 1636.
53. The OTA has been criticized for staying out of defense issues, see B. Casper, "The Rhetoric and The Reality of Congressional Technology Assessment," in T. J. Kuehn and A. L. Porter (eds.), *Science, Technology, and National Policy* (Ithaca, NY: Cornell, 1981), pp. 315-345. Chairman of the TAAC Harold Brown, also leveled this charge at the OTA from the inside, "Report of Working Papers of the TAAC on TA priorities," (10 June 1975), File #0352, Information Center, Office of Technology Assessment, Washington, DC.
54. R. S. Walker, Press Conference (Washington, DC, December 14, 1994).
55. C. O. Jones, *The Trusteeship Presidency: Jimmy Carter and the United States Congress* (Baton Rouge, LA: LSU Press, 1988), p. 46.
56. *Ibid.*, p. 57.
57. *Ibid.*, p. 57. See also C. O. Jones, *The United States Congress: People, Places, and*



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Policy (Homewood, IL: Brooks-Cole, 1982) and L. Reiselbach, *Congressional Reform in the Seventies* (Morristown, NJ: General Learning Publishing, 1977).

Copyright © 1995 Elsevier Science, Ltd., all rights reserved.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Remarks of Roger Herdman, OTA Director

September 29, 1995

Dear Colleague:

In 1972 the U.S. Congress, recognizing the importance for responsible legislating of unbiased expert information and analysis of major science and technology issues, established, by the enactment of Public Law 92-484, the Office of Technology Assessment (OTA), an agency of the Legislative Branch. In the 23 years that followed, OTA developed an experienced and knowledgeable professional scientific staff and, with the help of thousands of national and international experts and stakeholders, created a process, a culture, and a body of work in response to requests from Congressional Committees and OTA's bipartisan, bicameral Board of 12 Senators and Representatives.

The 104th Congress chose not to fund OTA's work after September 30, 1995. As an important final responsibility, the management and staff of OTA undertook making available widely and in easily accessible form as complete a collection as possible of



Cont'd...

TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

OTA's formal reports to Congress. Not included in this collection are testimony, various memos and letters responding to informal questions, administrative reports and the like. The material presented here forms an historical archive, evidence of the evolution of OTA's process, agenda and staff achievements, a collection of useful data, analyses, conclusions and options and a record of congressional interests. It also witnesses the value of a unique experiment of the United States Congress.

Roger C. Herdman
Director of the Office of Technology Assessment



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

In Memoriam: The Office of Technology Assessment, 1972-95

Hon. Amo Houghton in the House of Representatives

Congressional Record, Extension of Remarks - September 28, 1995, Page E1868-187

Mr. Speaker, the Congressional Office of Technology Assessment [OTA], which served the Congress with such great distinction for more than 20 years, will close its doors on September 29, 1995. On behalf of all the Members of this body, I would like to express my deep appreciation to the more than 200 dedicated and talented individuals at OTA who have served us so selflessly. And I want to share with you a brief summary of their accomplishments.

As you know, OTA's job was to provide the Congress with an objective, thorough analysis of many of the critical technical issues of the day. And that it did, examining cutting edge science in medicine, telecommunications, agriculture, materials, transportation, defense, indeed in every discipline and sector important to the United States. The agency appraised the costs and benefits of diverse technological systems: The computerization plans of Federal agencies; satellite and space systems; methods for managing



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

natural resources; systems for disposing of wastes. The list is endless. But to mention just a few more:

OTA evaluated the environmental impacts of technology and estimated the economic and social impacts of rapid technological change. The agency offered sound principles for coping with, reaping the benefits of, that technological change—in industry, in the Federal Government, in the work-place, and in our schools. The agency took on controversial subjects, examining them objectively and comprehensively for our benefit. It helped us to better understand complex technical issues by tailoring reports for legislative users. It provided us with early warnings on technology's impacts and it enabled us to better oversee the science and technology programs within the Federal establishment.

While pulling issues down to practical grounds, OTA has usually erred on the optimistic side. For example, OTA regularly spelled out its belief in the power of technology to improve our lives and help solve the Nation's problems. It worked through a basic understanding of how technology works, how institutions need to change to accommodate new technology, how resistant to change such institutions can be when the conditions are wrong, and how swiftly they can adapt when the conditions are right. OTA helped us discover the conditions for change.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Once OTA was well underway, it had 30-60 projects in progress, published up to 55 reports, and started approximately 20 new projects each year. Its work ran the gamut of subject matter, with approaches tailored for each topic and congressional request. For example:

- In 1975, one OTA program began a comprehensive policy analysis of the Nation's energy future, which it provided incrementally throughout the energy crisis.
- Between 1975 and 1980, another OTA group set the stage for today's booming industry in the technology assessment of health care by demonstrating the inadequacy of information on which decisions about technology were made; laying out the strengths and weaknesses of methods to evaluate technology; and crystallizing the process by which economic tradeoffs could be incorporated in decisions.
- In 1979, OTA expanded its work in agriculture to include all renewable resources and laid the foundation for others' efforts on sustainable



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

development and, later, ecosystem management.

- One OTA group examined each key mode of transportation in turn, focusing especially on urban transportation; better and less expensive ways to move goods; and technologies which used less petroleum. Another OTA program tracked materials through their total life-cycle—from exploration and extraction through production to use, reuse, and eventual disposal. A third investigated policies related to the private use of Federal public lands and other resources, addressing questions of public equity, the responsibility of industry, and the long-term protection of the environment.

In sum, OTA brought new and important science into the center of many congressional discussions. At times, OTA took part in high-profile debates on major pieces of legislation such as the 1980 Energy Security Act; Superfund; the Clean Air Act; and the Foreign Assistance Act. Also, the agency contributed to specific technical issues that puzzled nontechnical congressional staff—from risk reform to long-term African development; from acid rain to dismantling nuclear weapons; from the Strategic Defense Initiative to police body armor. One study on global climate change helped Congress evaluate more



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

than 131 pieces of legislation. At its busiest, OTA's testimony for various committees averaged more than once a week.

The executive branch and State governments were not outside the OTA reach. OTA published the landmark work on computers in schools. This eventually led to support for teachers as the way to make the best investment in technology—a key policy change in education. OTA's repeated work on the farm bill prompted important changes in the U.S. Department of Agriculture. And OTA's comprehensive series of analyses on nuclear waste management set out issues of technology and policy for both industry and the military.

In the course of every study, OTA accumulated vast amounts of raw information. By a project's completion, OTA had created a report with "value-added." OTA staff excelled at identifying the principal strands of analysis, weighing the evidence of each, and synthesizing essential pieces. The creed of OTA was to come as close as possible to objective analysis. It was a point of pride when reports were cited both by an issue's defenders and its detractors, as happened most recently in debates regarding the North American Free Trade Agreement and Oregon's Medicaid program.

The public and private sectors have recently discovered the benefits of organizing work around functional teams. OTA started with this model. It was used in every project. Team members came from different disciplines and backgrounds, with different experiences



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and perspectives, yet they always seemed to share a commitment to their product and not incidentally to the American people.

When work took OTA into new subject areas, staff broke ground for new intellectual pursuits. This was true in risk policy. And it was true when OTA developed the analytical methods to identify priorities for agricultural conservation. During OTA's lifetime, "international interdependence" changed from slogan to reality. OTA was ahead of the curve, conducting international case studies and exploring previously ignored aspects of international security. In fact, between 1985 and 1990, OTA's studies of the impacts of technology on the economy, environment, and security of the U.S.S.R. and Eastern Europe made clear that the demise of centrally planned economies was inevitable.

As a result of all this, OTA gradually became recognized worldwide as the top institution of its kind. Representatives from about one-third of the world's nations visited OTA one or more times to learn how OTA worked; how it became so valuable to Congress and the American people; and how these foreign nations might develop their own "OTA's." Austria, Denmark, the European Community, France, Germany, Great Britain, the Netherlands, and Sweden have copied or adapted the OTA style. Similar organizations are



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

being discussed or formed in Hungary, Japan, Mexico, the People's Republic of China, Russia, Switzerland, and Taiwan.

The above is simply the most visible aspect of OTA's international impact. Visitors from other countries stopped by OTA almost every week to discuss specific technologies or technology-related issues. Several OTA staff spoke frequently about OTA in other countries. A number accepted temporary details to academic or government positions overseas. And still others traveled abroad to teach short courses on technology assessment.

In its 24 years, OTA published nearly 750 full assessments, background papers, technical memoranda, case studies, and workshop proceedings. OTA reports were recorded as being "remarkably useful," "thorough," "comprehensive," "rigorous." At their best, OTA reports were among the most cited references on their subjects. "Landmarks," they were called, "definitive," and the "best available primers." From 1992 to 1994, twelve assessments won the National Association for Government Communicator's prestigious Blue Pencil Award, successfully competing against as many as 850 other publications in a single year. In the same 3 years, 12 additional reports were named among the 60 Notable Government Documents selected annually by the American Library Association's Government Documents Round Table—representing the best Federal, State, and local govern-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ment documents from around the world.

In typical comments, the journal *Foreign Affairs* claimed that, “The Office of Technology Assessment does some of the best writing on security-related technical issues in the United States.” A former Deputy U.S. Trade Representative called OTA’s 1992 report on trade and the environment, “the Bible.” A Senator described OTA’s work on the civilian impacts of defense downsizing as “... a superb study and the standard by which all similar efforts will be judged.” And the head of one state’s plant protection agency described OTA’s study of non-indigenous species as “... a benchmark which will be the most heavily referenced document for years to come.”

OTA’s reports were often best-sellers at the Government Printing Office and the National Technical Information Service: GPO sold 48,000 OTA reports in 1980 alone. Commercial publishers reprinted at least 65 and translated two reports all or in part. The Superintendent of Documents selected 27 OTA reports to display in the People’s Republic of China in 1981. And OTA itself reissued reports that had unusual staying power. For example, OTA’s 1975 report on tanker safety and the prevention of oil spills was reissued in 1990 after the Exxon Valdez accident. Likewise, OTA combined the summaries of two particularly popular reports—on tropical forests and biological diversity—and reprinted them in 1992.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

OTA staff represented every major field of science and technology, ranging from board-certified internists to Ph.D. physicists. OTA staff were sought out to serve their respective professional associations. A number were elected to offices or boards—the International Society for Technology Assessment, the International Association for Impact Assessment, the Association for Women in Development, the Ecological Society of America, etc. Two staff formed the Risk Assessment and Policy Association and others went on to found their own companies.

Above all else, OTA staff were teachers. As a result of their efforts, hundreds of thousands of people are better informed not only about science and technology but also about the structure and function of Congress. OTA served 30-60 congressional committees and subcommittees each year. Thirty-one Senators and Representatives had the privilege to serve on OTA's Technology Assessment Board and we became among the Congress' most knowledgeable members on issues of science and technology.

Each year, at least several hundred advisory panelists and workshop participants also took part in OTA's work. Some years, OTA tapped as many as 1,500 leaders from academia, non-governmental groups, State and local governments, and industry. OTA's advisors valued the experience and said it made them more fit for decisionmaking in their own fields. Some were experts; some were stakeholders. Still other were members of the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

larger public. As early as 1975, OTA incorporated public participation and stakeholder involvement into a major study of offshore energy development: Nearly 15,000 people were involved. Later approximately 800 African farmers and herders were included in an evaluation of the United States-funded African Development Foundation.

In addition, OTA provided 71 scientists and engineers with a challenging and memorable year on Capitol Hill as Morris K. Udall Congressional Fellows or congressional fellows in health policy. Many of OTA's younger employees gained a taste for research—and for public service—at OTA and went on to graduate school to become the next generation of business leaders, scientists, engineers, and policy analysts.

OTA's record depended upon remarkable support staff as much as it did on the agency's analytical staff. Their work was the standard against which other Government agencies were measured—and often found lacking. People came from around the world to attend OTA meetings—and often commented that OTA's workshops were the most well supported, best organized, and most productive they had ever attended. Contractors were gratified by the ease with which their travel arrangements and invoices were handled. OTA processed hundreds of security clearances efficiently and without incident—without which OTA could not have done its work in national defense. Reports sped through OTA's publishing process and grew steadily more attractive through the years.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The staff of OTA's Information Center could find even the most obscure research material—and provided a friendly agencywide gathering place. The Information Center, the technical support office, and the agency's electronic dissemination program kept OTA at the cutting edge of technology for research and for public access to the agency's work.

OTA was a small agency. It was a generous place. For some, colleagues became like second families and these relationships extended to committee and personal staffs. Friendship, joy, and grief seemed to be shared without regard to job description. Many at OTA value this legacy as much as any other. But of course, OTA was not perfect. At times, its greatest strengths—flexibility, tolerance, the preponderance of technical skills—became its biggest weaknesses. One outsider looked at OTA's work and commented, "You must have just about the most interesting job there is." I know that many at OTA, for much of their time, felt exactly that way.

Although OTA closes on September 29, 1995, the Congress will continue to benefit from its work. Stark evidence of the dedication of OTA staff is the fact that they continued working to the end. More than 30 reports will be delivered to requesting committees even after the doors are closed.

OTA soon will be a memory, and we will discover what is lost. But we can salvage something. Those of us who have used OTA reports know that most of them have long



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

shelf lives. The really important issues—the issues OTA worked on—do not get solved and go away in one Congress. In January 1996, all of OTA's reports will be issued on CD-ROM—OTA's final legacy. We should be proud of it.



Amo Houghton, a Republican, represents the 31st Congressional District of New York.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Technology Assessment No Longer Theoretical

*by James H. Krieger
Technology Editor
Chemical and Engineering News
April 6, 1970*

Technology assessment is no longer just a speculative concept. Perhaps sooner than many had expected, it could be on the verge of institutionalization. The concept has been embodied in a specific bill which will soon be introduced by Congressman Emilio Q. Daddario (D.-Conn.) in the House of Representatives (C&EN, March 30, 1970, p. 27).

The bill will be something concrete to which involved persons can now respond. The problem may be one of reaching all those who should be involved but who are perhaps unaware that they are—particularly industry.

As drafted, the bill would establish an Office of Technology Assessment to aid Congress in identifying and considering existing and probable impacts of technological application. OTA would consist of a technology assessment board to formulate policies of the office and a director to carry them out and to administer the operation. The board



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

would be made up of 13 members—two senators, two representatives, the Comptroller General, the director of the Legislative Reference Service of the Library of Congress, and seven members from the public. The last would be persons eminent in one or more fields of science or engineering or experienced in administering technological activities. The director of OTA would be equivalent in rank to the chairman of the Atomic Energy Commission or the director of the National Science Foundation.

The bill as drafted asks \$5 million for OTA for the first fiscal year. OTA would not itself operate any laboratories, pilot plants, or test facilities, but would contract with other organizations for whatever it feels is necessary.

The bill leaves no question as to why technology assessment is considered a necessary activity. It notes that emergent national problems—physical, biological, and social—are of such a nature and are developing at such an unprecedented rate as to constitute a major threat to the security and general welfare of the United States. Such problems, it says, are largely the result of and are allied to the increasing pressure of population, the rapid consumption of natural resources, and the deterioration of the natural and social human environment. The growth in scale and extent of technological application, it continues, is a crucial element in such problems and either is or can be a pivotal influence with respect both to their causes and their solutions.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

No one can know at this point what technology would be assessed. Some would undoubtedly relate to government programs. But it isn't difficult to imagine that much of it would be technology either initiated or carried out by industry. Much would be chemical technology or would directly or indirectly affect chemicals or chemical products.

Suppose that technology assessment had been an operational concept, say, 20 years ago. Suppose also that something like today's solid waste problem had been foreseen, and that packaging technology had been the subject of assessment. It is interesting to speculate on the direction that plastic and nonplastic packaging would have taken.

This may seem a somewhat trivial example beside some of the potential problem areas now developing—genetic engineering or weather modification, for example. But it does serve to show that industry must become involved, whether or not the particular bill about to be introduced passes. If not this bill, then something similar will be passed eventually. If not this year, then next. It would be beneficial to the entire process of technology assessment if industry would adopt some positive role at the start, rather than responding later as an offended or regulated party when legislation based at least in part on technology assessment results.

Copyright © 1970, The American Chemical Society, all rights reserved.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The Debate Over Assessing Technology

Congress Wants To Set Up an Office To Evaluate the Impact of New Developments

Business Week

April 8, 1972

Quietly making its way through Congress is a bill that would create an Office of Technology Assessment to determine for Congress the byproduct effects of new technology. Many businessmen and scientists are not even aware of the bill's existence, and most of those who do know about it have no clear idea of what role the new office would play. But among these last there is an increasing fear that an OTA could have a sharp and negative impact on technological development in the U.S.—and on industry's pocket-book.

The chances that Congress will approve the bill seem excellent. It has already passed the House, and the Senate is expected to approve its version in the next few weeks. There has been little controversy over it in either chamber. Many senators and representatives seem to feel that they need expert and unbiased advice before they approve programs that call for spending millions of dollars for technological advances that may have unknown



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

side effects.

But outside Congress, there is growing skepticism that any formal organization can properly evaluate the impact of technological change on the environment, the economy, and society. Says Daniel E. Noble, retired vice-chairman of Motorola, Inc., and now head of the company's Science Advisory Board: "If such an office is expected to anticipate the impact of science and engineering over the long term, this is absurd." And William O. Baker, vice-president for research and patents at Bell Labs, says: "I don't know where you'd start in the course of innovation to make technology assessments.... You could only be sure to restrain technical progress."

Need

Some of the fears expressed arise because it is still far from clear how a Congressionally established Office of Technology Assessment would operate. Arthur M. Bueche, General Electric's vice-president for research and development, would not mind an office that functioned as "an information activity for members of Congress." But he warns that if the OTA were to be set up as "a police activity, it would stifle innovation." And Robert Anderson, president of North American Rockwell Corp., says he would "hate to see a super group" evolve.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Congress now gets a form of technology assessment from the National Research Council, but these studies usually do not attempt to explore the byproduct effects of any particular program. And some congressmen question the NRC's impartiality because the council also works for the executive branch. For instance, Senator Thomas F. Eagleton (D.-Mo.) recently derided an NRC study—which concluded that the technology necessary to meet the 1976 standards for auto exhaust emissions is not currently available—as being the result of “a nice admiration society” between scientists and industry.

Former Congressman Emilio Q. Daddario of Connecticut, who led early efforts to establish a technology assessment office, says that the bitter and confused debate over the supersonic transport could have been avoided if Congress had had an OTA to help it. One key issue, he recalls, was the charge that SST engine emissions could cause skin cancer in humans by upsetting natural radiation filtering mechanisms in the atmosphere. But because the charge came from opponents of the SST among environmentalist groups, it lost much credibility. Similarly, arguments that overseas sales of the SST would help the balance of payments had little effect because they came from strong SST advocates in the Administration.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Costs

Those businessmen worried about the added costs to industry of technology assessment have the recent example of the study of the Alaska pipeline's environmental impact to confirm their fears. The study delayed the start of construction for two years, and Alyeska Pipeline Service Co. is expected to have to pay the \$9 million it cost the Interior Dept. to make it.

But Joseph Coates, a program director of the National Science Foundation, thinks industry's fears are unfounded. Says he: "We're committing ourselves to spending enormous sums on technological projects, so we can't afford to play the planning game by ear."

Businessmen "might panic" over technology assessment and "take it to mean technology arrestment," Coates says. "But stopping an already-committed project is the least likely consequence." Technology assessment, he believes, "would steer an already-committed project to produce the least adverse consequence."

House version

Though there has been little argument over the bill in Congress, it has gone through some changes in the last few months. The bill passed by the House in February is a watered-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

down version of the one reported out of the House subcommittee on science, research, and development. Representative John W. Davis (D.-Ga.), subcommittee chairman and chief sponsor of the bill, wanted a stronger and more independent OTA, with public representatives on its board and a director who could start assessments on his own and subpoena testimony and records.

This went too far for Representative Jack Brooks (D.-Tex.). Such an office, he says, “set up apart from the Congressional process and possibly working in opposition to the committees in Congress, could delay or jeopardize the improvement of information resources.” His amendment changed the OTA board to one made up solely of members of Congress with complete control over the director. It also eliminated the OTA’s subpoena powers and its authority to initiate assessments.

Under the House bill, the OTA’s 50 to 100 professional “assessors” would make their studies only at the request of Congressional committees. Their job would be to spot impacts of technology, establish “cause-and-effect relationships,” determine alternative technological methods of implementing programs, and estimate and compare the impacts of these alternatives.

In this form, OTA would be much like a joint Congressional committee, less innovative than the original office and subject to more political pressures. But the Senate may add



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

some changes of its own. It may, for instance, decide to include an advisory panel of outside experts to assist the board.

Serving the public

There are some who doubt that an OTA will work the way Congress wants it to. Technology assessment is now an “in” concept, but, they point out, it is far from being a practical tool. Says Edward E. David, Jr., White House Science Adviser: “The assessment process is in a very primitive state.”

David claims that more research is needed if assessments are to be better than simple seat-of-the-pants judgments. But he agrees that “we must develop the techniques necessary for assuring the public that its concerns are being duly considered.”

Increasing public pressure for such assurance is part of the reason Congress wants its own independent advisers. Congress could place “more faith and trust” in OTA than it can in existing sources, which have “built-in biases and prejudices whether they be industry or government agencies,” says Robert N. Faiman, vice-provost at the University of New Hampshire, who testified in favor of the bill.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The right to assess

But to gain influence, the technology assessors would have to establish their credentials with the main committees of Congress, and most of the committees are likely to prove jealous of their power to assess legislation on their own. For instance, Sidney L.

McFarland, staff director of the House Interior Committee, says: “I don’t foresee much interplay between our committee and an OTA. We already have highly qualified staff members who can analyze programs proposed by the agencies.”

And finding a staff that can make competent assessments may be difficult. At least half a dozen schools offer courses in technology assessment, but there is no generally accepted definition of a “technological assessor,” nor any agreement on whether he should be a systems analyst, an operations researcher, a physicist, or a sociologist. Says the NSF’s Coates: “It isn’t a question whether the field will be invaded by phonies. It already has been.”

Philip Handler, president of the National Academy of Sciences, is not so worried about such problems. “Technology assessments,” he says, “have been going on for quite a long time.” Regulatory agencies, such as the Food & Drug Administration, the Environmental Protection Agency, and the Federal Trade Commission, have been forced into assessments because of their mission, he points out. And the NSF itself is financing assessments



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

of such diverse developments as offshore oil production, no-fault insurance, and cloud-seeding programs.

The House bill calls for using the NSF as a study contractor for the OTA. But this could be ruled out in the Senate bill. Some congressmen feel that OTA should have no close ties with executive branch agencies.

If the OTA bill passes, as seems likely, the Administration may have to sort out the science advisory groups in some 115 federal agencies and offices that now make technology assessments. Says Gabor Strasser, who spent two years at the White House Office of Science & Technology studying assessment procedures: "When an agency goes before Congress to justify spending for new technology, it will have to have answers for the OTA director."

Copyright © 1972, Business Week, all rights reserved.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

O.T.A. Caught in Partisan Crossfire

*by Colin Norman
Technology Review
October/November 1977*

The Office of Technology Assessment (OTA) has endured a long, hot summer, and the autumn may not bring much relief. Since it was established in 1973 to provide Congress with analyses of technical issues, OTA has been criticized for a variety of sins of omission and commission. But during the past few months, the Office has been turned into a battleground for partisan politics. Though the dispute has been concerned more with the style of OTA's operation than with the quality of work, a few serious questions are being raised about the Office's future role and responsibilities.

The trouble began when Emilio Q. Daddario, OTA's founder and for the past three and a half years its Director, announced his intention to resign. Dr. Daddario had long said that he intended to stay at OTA only long enough to get the Office under way, and his resignation should have evoked neither undue surprise nor cries of foul deeds. Nevertheless, a few days after the announcement, William Safire—a former speechwriter for



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Richard Nixon, now a conservative columnist for the New York Times—wrote a column claiming that Dr. Daddario had been ousted by Senator Edward Kennedy (D.-Mass.), Chairman of OTA's Congressional Governing Board. The move, said Mr. Safire, was prelude to an attempt by Senator Kennedy to "take over" OTA. Mr. Safire said Senator Kennedy planned to install his own aide, Ellis Mottur, in the Director's chair and would then use OTA as an extension of his personal staff.

The source of those allegations, it turned out, was Representative Marjorie Holt, a conservative Republican from Maryland who was Vice Chairman of OTA's Governing Board. Within a week of Dr. Daddario's resignation, Representative Holt also quit, firing off a letter to Senator Kennedy saying that she could no longer have any influence on OTA's policies because the Board was so dominated by Senator Kennedy and his allies.

A week later another member of OTA's Congressional Board, Senator Richard Schweiker (R.-Penn.), also resigned. Senator Schweiker said he was quitting simply because his other Senatorial duties had grown and he no longer had time to attend to OTA affairs. Though the move was not inspired by political differences or by concern at the direction OTA is taking, it is nevertheless telling. Senators and Congresspeople are not in the habit of resigning from committees which give them influence or political visibility, and Senator Schweiker evidently felt that the OTA Board provides neither of those attributes.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The third blow fell late in July, when a conference committee finally agreed on a budget bill for the Legislative Branch for fiscal year 1978. The bill included a cut of about \$1.6 million in the budget requested for OTA, and a decree that the Office's staff should be pruned. OTA will have a budget of just over \$7 million next year. The move indicates that OTA has yet to establish its utility to the people who count most on Capitol Hill—the appropriations committees.

Timid and Trivial?

The upsets followed critical reports on OTA last year. The first, from the House Commission on Information and Facilities, said that OTA's internal management was in a mess and there was a good deal of confusion about the Office's role. That was followed by the resignation of Harold Brown, now President Carter's Secretary of Defense, as Chairman of OTA's Advisory Council, an independent body which provides policy advice to the OTA Board and Director. In his letter of resignation, Mr. Brown offered some words of praise for OTA, but suggested that it had become bogged down in trivial studies and had neglected its primary role of providing Congress with an early warning system on the potential side effects of new technology. In addition, there has been some carping from outside OTA to the effect that the Office has been too timid in its choice of issues and that



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

it has really been providing policy analysis instead of technology assessment.

Before examining those complaints, it is worth reviewing the origins of OTA and its goals.

OTA sprang from discussions in the mid-1960s between Dr. Daddario, then a Congressman from Connecticut and Chairman of the Subcommittee on Science, Research and Technology, and a number of scientists including Jerome Wiesner, President of M.I.T. The basic idea was that Congress lacked the technical expertise to match the Executive Branch on technological issues, and a body to provide technical advice to legislative committees was badly needed. Dr. Daddario translated the idea into legislation, and Congress eventually approved a bill establishing OTA in 1973. By that time, Dr. Daddario had left Congress to make a bid for the Governorship of Connecticut, and he was named the first Director of OTA.

The legislation decreed that OTA should be managed by a Congressional Board consisting of six Senators and six Representatives, with equal numbers of Republicans and Democrats. Senator Kennedy was elected the Board's first Chairman; he was followed by Olin Teague, Chairman of the House Committee on Science and Technology, and the chairmanship reverted back to Senator Kennedy earlier this year. In addition, the legislation established an independent Advisory Council to provide policy advice for OTA.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

When Harold Brown resigned from the Council last year, Dr. Wiesner was elected Chairman.

So much for the organizational arrangements. What was OTA supposed to be doing? OTA is a creature of the Congress; it was established to provide advice to Congressional committees when asked, and it must tailor its product to fit the requirements of legislators. This immediately raises a problem, for Congress is usually concerned with immediate issues, and requires quick answers, while OTA is supposed to take a long-term view. It is therefore not surprising that much of OTA's work has consisted of relatively straightforward policy analysis tied to specific pieces of legislation.

In fact, some of OTA's most widely praised studies have not been technology assessments, according to a strict definition of the term. OTA put together some quick analyses of the Ford and Carter administrations' energy policies which have been credited with eliciting more funds for conservation technologies, for example. It has also produced reports on the bioequivalency of supposedly identical drugs made by different companies, a review of the research and development programs of the Environmental Protection Agency, and a study of computer policies in the Internal Revenue Service. All of those studies were essentially policy analyses but they were the kind of thing that Congress was interested in.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Of the larger studies which conform more closely to technology assessment, only one is significant: a massive investigation of the consequences of expanding offshore oil production along the Atlantic coast, a study which involved considerable public input, identified many potential problems and issues, and attracted a good deal of attention.

Political Spats

So far, OTA has produced more than 40 reports and, though the office has received a lot of criticism, nobody has taken a good look at the products to see whether they have been influential or of reasonable quality. Two such studies are about to be undertaken. First, OTA's Advisory Council is beginning an investigation of the Office's functions, its impact, and the quality of its work. The study, which was requested by the board at the instigation of Senator Kennedy, has been one of the irritants in the latest round of disputes concerning OTA.

The second study will be conducted by the House Committee on Science and Technology this fall. The Committee is planning a series of public hearings at which some of OTA's critics, including Representative Holt, are expected to testify. The objective, according to committee staff, is simply to review OTA's record so far, but it is likely to provide a public forum for some of OTA's critics.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

And that brings us to the latest charges that Senator Kennedy is trying to take over OTA. Way back in 1973, when OTA was just organized, an article appeared in the Wall Street Journal suggesting that Senator Kennedy was about to use OTA to build up his power base for the 1976 Presidential election. Should the latest accusations be given any more credence?

Senator Kennedy certainly dominates OTA's Congressional Board. His views usually carry the day, and on the few occasions when there has been a vote on a major question, the majority has sided with Senator Kennedy while the dissenters have been Representative Holt, her two fellow House Republicans, and Olin Teague. One reason why Senator Kennedy has been so influential is that he is perhaps the most active and interested member of OTA's Board (witness, for example, Senator Schweiker's statement that he no longer has time for OTA affairs). But Senator Kennedy's critics charge that his influence stems chiefly from another source: he has some of his own staff aides working for OTA, and he has close connections with Dr. Wiesner.

In fact, most of the Senate members of the OTA Board has some of their own staff aides working for OTA, a situation which has raised complaints from a few other OTA officials, who see the political appointees as inconsistent with OTA's supposedly non-partisan role. As for the complaints about the link between Senator Kennedy and Dr.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Wiesner, Dr. Wiesner was not appointed by Kennedy (contrary to some published accounts), but was elected by other council members. The election, moreover, took place when Representative Teague, not Senator Kennedy, was Chairman of OTA's Board

Another possible reason for the dispute over Senator Kennedy's role is pure partisan politics. Senator Kennedy, a liberal Democrat, is always a prime target for conservative Republicans, and this case is no exception.

Representative Holt's resignation followed three differences of opinion with Senator Kennedy on OTA's Board. The first concerned a vacancy on the Advisory Committee. J. Fred Bucy, an executive of Texas Instruments, was up for reappointment to the Council but Senator Kennedy objected, criticizing Mr. Bucy's record of attendance during his first term of office. Representative Holt charged that Senator Kennedy's objections stemmed from differences of opinion on several matters of policy. The second irritant was Senator Kennedy's proposal that the Advisory Council should conduct a review of OTA's operations, a review which Representative Holt believed would be biased because of the Council's alleged close links with Senator Kennedy. And third, Representative Holt objected to Senator Kennedy's proposal that OTA should do a quick study of the data which led to the proposed ban on saccharin. Representative Holt said that the review would add nothing to the debate and charged that Senator Kennedy only wanted a study



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

which would support his own position. Representative Holt was defeated on all three issues, and subsequently resigned from the Board.

All of these spats mask the central question about OTA: is it performing useful functions, and is it having any impact on congressional operations? OTA staffers point to a sack of press clippings and comments from members of Congress praising its work, but there are few issues on which OTA can claim to have had decisive influence. The reviews by the Advisory Council and the House Committee on Science and Technology should, however, provide some real information on the quality and impact of OTA's operations—though there is also the danger that the House Committee hearings may degenerate to yet another exchange of partisan rhetoric.

Meanwhile, a replacement for Dr. Daddario as Director of OTA is being sought, and an appointment is expected soon.

Copyright © 1977, Technology Review, all rights reserved.



Colin Norman is a Research Associate at Worldwatch Institute. He was Washington correspondent for Nature and is a regular contributor to Technology Review.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Little-Known Agency Draws Worldwide Interest

*by David Burnham
New York Times
January 12, 1984*

WASHINGTON, D.C.—A tiny Federal agency with an extraordinary mandate has become a powerful magnet for government officials from all over the world.

In just the last year, for example, more than 100 visitors have come to Washington from 25 countries including China, France, Indonesia, Denmark, Egypt, Britain, Brazil and Australia to find out how the agency works and what it produces.

The focus of all this international interest is an agency that is largely unknown to the American people, the Office of Technology Assessment. Created over 10 years ago as an arm of Congress, it was given the difficult assignment of trying to anticipate, understand and describe how the world's new technologies will effect the people, environment and institutions of the United States.

In a world where dozens of powerful new chemicals, startling scientific discoveries, far-reaching computer systems, earth-shattering weapons and potent drugs present diffi-

Cont'd...



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

cult new social problems on almost a weekly basis, the challenge of this job is a major one, apparently of interest to both the democracies and the authoritarian states. The head of the agency, Dr. John H. Gibbons, visited the Soviet Academy of Sciences last spring to describe his agency's work.

Pressures From Congress

Dr. Gibbons is a 55-year-old physicist who has specialized in energy and environmental issues. With a permanent staff of 139 people and a \$14.6 million budget that enables the agency to hire some 2,000 outside experts a year to work on special projects, Dr. Gibbons is generally credited with guiding the agency out of difficult waters in its first few years, when it was buffeted by political pressures from Congress.

"The problem is to keep the agency relevant to the political process but avoid partisan biases," he said. "Our process of tapping national wisdom, stripped of bias and advocacy, has begun to make its mark."

While many of the reports prepared by the OTA in the last few years have won wide praise, some critics doubt the agency's work has much effect on the policy decisions made by the Federal Government on such volatile and complex subjects as acid rain, the financing of new missile systems and improving the performance of the nation's schools.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

“The need is not for more seers and forecasters,” said Lawrence Tribe, a professor at Harvard Law School, one of the early advocates of technology assessment. “The real problem is to find ways to make such advice more salient.”

Professor Tribe contended in an interview that the principle problem with OTA was outside its control. “I think that to be effective, there would have to be a similar effort in the executive branch,” he said. “Unfortunately, however, the last two or three administrations have gradually dismantled and politicized the scientific advisory machinery at the White House level so that the Congressional effort seems to make relatively little difference.”

Representative George E. Brown Jr., Democrat of California who is a member of the agency’s board, has a different concern. “There is no question that the office has escaped the controversy of its earlier years and is now providing Congress with useful material, a distillation of the best knowledge on a subject and a list of policy options that Congress might adopt,” he said. “But I am not sure that that is what we require, that rather than possible options, we need clear strategic advice.”

A brief description of some of the agency’s recent publications suggest the wide range of its concern. At the request of the Senate Committee on Foreign Relations, for example, the agency prepared a 151-page study, “The Effects of Nuclear War,” which described the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

estimated casualties and destruction that would result from the explosion of nuclear bombs at various altitudes over Detroit and Leningrad. This authoritative study has become one of the agency's most requested reports.

In a second study, undertaken for the House Committee on Education and Labor, the staff and consultants of the OTA analyzed "Information Technology and its Impact on American Education," describing the advantages and disadvantages of various possible actions Congress might consider in this area to improve the performance of the nation's schools and their students.

At the request of several Congressional committees, the agency prepared a 331-page report entitled "Impacts of Applied Genetics." It described the process and potential effects of man's rapidly increasing ability to manipulate the inherited characteristics of plants, animals and microorganisms.

In the agency's history, according to several staff members and others who have followed its history, the OTA has gone through several phases. At the beginning, under a former Connecticut Congressman, Emilio Q. Daddario, many of the staff members worked almost directly for the Senators and House members who served on the agency's board, and most of its projects were directly related to the political needs of these members.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Early Days of Criticism

Then, Russell Peterson, a highly regarded industrial scientist who now is the president of the National Audubon Society, became the head of OTA. Mr. Peterson won the right to have complete control of staff appointments. But he ran into criticism from Congress because he tended to ignore requests for help on immediate problems and concentrate all of the agency's research on long-term projects.

Dr. Gibbons, it is generally agreed, has retained the right to hire his own staff while at the same time becoming somewhat more responsive to the demands of Congressional committees for assistance on immediate problems.

"OTA is doing good, sometimes excellent work," said Frank Press, the current head of the National Science Academy, a nonprofit organization that earns most its keep doing similar kinds of research for executive branch agencies such as the Energy Department. "The only reservation I have is that it has become too popular with Congress and is not able to devote enough of its time to looking further into the future at the very large technical questions."

Copyright © 1984, The New York Times, all rights reserved.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

OTA Emerges as Nonpartisan Player

Surviving a Rocky Start, Science Agency Wins Over Most Skeptics

by Barton Reppert

Associated Press

Washington Post

January 5, 1988

Politicians usually aren't scientists and they're often stumped by political questions with scientific dimensions—such as whether to build a supersonic transport, ban DDT or get behind solar energy.

Fifteen years ago, to help with such questions, Congress created a tiny agency, by Washington standards—the Office of Technology Assessment.

Conservatives were wary. Some saw it as a shadow brain trust for an ambitious Sen. Edward M. Kennedy (D.–Mass.), one of the first to argue that Congress needed its own science adviser. But now, OTA has largely overcome those suspicions and won a role as a dispassionate, nonpartisan player in the legislative process.

OTA has issued authoritative research on issues ranging from health care policy and



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

advanced computer technology to the feasibility of President Reagan's Strategic Defense Initiative missile defense system.

It has looked into electronic surveillance, genetic engineering, use of lie detector machines and the management of hazardous waste.

John H. Gibbons, 58, a physicist and environmental specialist who has headed the agency since 1979, foresees an increasing demand for his agency's analytical talents.

"Technology as it influences international trade, national defense, environment, our economic growth and progress, health care—all the way across the board, those problems are going to get more vexing, not less vexing, in the years ahead," Gibbons said in an interview.

OTA remains the smallest of the agencies Congress has created for its guidance. Its sister agencies include the General Accounting Office, which conducts investigations of government programs to help Congress in its oversight role; the Congressional Budget Office, which performs economic analysis; and the Congressional Research Service of the Library of Congress, which answers inquiries from Congress on many nontechnical issues and does not hire outside experts.

"We have learned that there are big advantages in being small," Gibbons said. "If you're created to be small in size, you are constantly forced to the outside to get your



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

information.”

With 145 people and a budget of \$16.6 million, OTA conducts about 30 assessments at a time, beginning between 15 and 20 new projects every year.

Full-scale assessments—involving use of outside specialists, convening of advisory panels and an intensive review process—take about 18 months and result in a report typically running 300 pages or longer.

The agency is housed in a five-story colonial-style building a 10-minute walk from the Capitol. “A few blocks away is just about right,” Gibbons observed. “It keeps you removed from the daily fire fights but close enough to be part of the process.”

OTA strives to argue all sides of an issue, providing a variety of policy options for Congress. John P. Andelin Jr., an assistant director, said, “Essentially our work is laying out intellectual road maps.”

Overseeing OTA is the Technology Assessment board, a 12-member bipartisan panel of senators and House members headed by Rep. Morris K. Udall (D.–Ariz.). A member of the board, Rep. George E. Brown Jr. (D.–Calif.) said, “OTA has acquired a real reputation for quality performance, and its products are being used very widely.”

He said the fact that OTA reports try to present all points of view “is both a strength and a weakness.”



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

“From my standpoint I think there should at least be the opportunity for OTA to make a recommendation for what is the best policy option under the given circumstances,” Brown said. “I think we ought to move in that direction.”

OTA recently found it is capable of stirring up controversy. Advocates of unorthodox therapies for cancer charged that the agency is bungling a study of unusual cancer treatments. They said that the OTA official in charge is likely to be biased because of his previous experience at Memorial Sloan-Kettering Cancer Center in New York, a bastion of conventional cancer treatment. Gibbons disputed that charge.

Leading up to the establishment of OTA were years of frustration in a Congress trying to come to grips with technology issues—among them nuclear weapons testing, DDT and other pesticides and the U.S. supersonic transport.

According to Gibbons, “Making decisions involving technology was just getting tougher because there’s no free lunch out there. There’s nothing that has all gain.”

OTA’s early years were rocky amid allegations that the agency’s secret agenda was to further Kennedy’s political ambitions. He was the first chairman of the congressional board. There also were suspicions that OTA would have an antitechnology bias.

“A lot of people were very concerned that OTA might come in and be a naysayer on technology,” Gibbons said. “I think that was a particular concern of the conservatives. But



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

I think that concern has been essentially allayed.”

He observed, “We enjoy a lot of support from the conservatives now and from the business community, because they see the place not as negative about technology but essentially technology neutral. We’re full of technologists, we have a lot of technological optimists.”

Born on the eve of the 1973 Arab oil embargo, OTA has devoted considerable attention since then to energy issues—among them nuclear power, prospects for discoveries in domestic oil and gas, the federal role in energy research and regulatory intervention in the energy marketplace.

By the early 1980s, however, the agency began moving into other areas, including national security and arms control, where OTA’s work has drawn plaudits and sharp criticism.

Peter J. Sharfman, an international security program manager, said that a 1984 paper on ballistic missile defense “stirred up a tremendous amount of controversy.”

The paper by Ashton B. Carter, then with the Massachusetts Institute of Technology, concluded: “The prospect that emerging ‘Star Wars’ technologies, when further developed, will provide a perfect or near-perfect defense system, literally removing from the hands of the Soviet Union the ability to do socially mortal damage to the United States



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

with nuclear weapons, is so remote that it should not serve as the basis of public expectation or national policy about ballistic missile defense.”

Pentagon officials argued that the paper was technically flawed and asked that it be withdrawn, but OTA stood its ground.

“If you look today at the principal findings, you will discover that they are the conventional wisdom,” Sharfman said. “In fact, you will discover that the SDI [Strategic Defense Initiative] Organization would agree with those findings today.”

Sen. Ted Stevens (R.-Alaska), vice chairman of the congressional board, remains critical. “I think they wasted a lot of time trying to be the focal point for a lot of dissidents,” Stevens said.

He said he was concerned that some OTA studies go too far afield from the agency’s charter to analyze technology issues. “When it stays within its assigned area it does a good job,” Stevens said, adding: “It’s gone beyond the area of technology in some instances and gotten into social policy.”

Copyright © 1988, The Washington Post, all rights reserved.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Death by Congressional Ignorance

How the Congressional Office of Technology Assessment—Small and Excellent—was Killed in the Frenzy of Government Downsizing

*by M. Granger Morgan
Pittsburgh Post-Gazette
August 2, 1995*

Decision-making is easy if you can ignore the facts and skip the details. Last week the U.S. Congress took a big step toward keeping the pesky facts and details out of its deliberations by closing down its small, but highly acclaimed, Congressional Office of Technology Assessment. Both senators from Pennsylvania, Arlen Specter and Rick Santorum, voted for elimination.

Established by the U.S. Congress in 1972 to provide in-depth technical assessments in support of congressional decision-making, OTA has been overseen by the Technology Assessment Board, a bipartisan committee of six senators and six representatives drawn equally from the two parties.

Because of the political environment in which it has operated, OTA reports rarely draw



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

definitive conclusions. Rather, in clear and simple language, supported by attractive illustrations, they summarized the technical facts, identified problems, laid out alternatives, and discussed their pros and cons.

The reports often placed limits on the range of political debate by laying out what was scientifically feasible. Legislators on opposite sides of contentious issues have often cited the same OTA report as a basis for the lines of argument they have advanced.

OTA studies, which typically lasted for a year or two, have been performed by a small professional staff of about 140, over half of whom hold doctorate degrees in a variety of fields that include science, engineering and various areas of social science. In addition, to assure balance and completeness, each study was assisted by an advisory board of outsiders who were selected to represent a wide range of knowledge, perspectives and interests. Topics of OTA studies have ranged widely from nuclear proliferation to pollution control, industrial competitiveness, computer security and privacy, and medical technology.

OTA's neutrality and success have been widely acclaimed. The liberal Washington Post has characterized the agency as "a dispassionate, nonpartisan player in the legislative process." The conservative San Diego Union has noted that "the smallest agency on the Hill is the best in terms of efficiency and thoroughness. It is certainly the least political bunch—this is real sci, not political sci—in the world's most political town."



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

And in an editorial this spring, the conservative Washington Times wrote, "...the agency has emerged as the voice of authority in a city inundated with statistics and technical gobbledygook." It went on to note that one of the OTA's more important recent contributions was to point out, during the health-care debate, "that no one really knew how the various proposals would affect long-term costs." Over the past decade, delegations have come from all over the world to study OTA as a model of what they would like to achieve in their own country.

So, with all this success, what killed OTA?

It was small, and it got lost in the dust of the political stampede on the Hill to downsize and streamline.

It first got cut in the House budget bill. Rep. Amo Houghton, R-N.Y., former CEO of Corning Glass, and one of the most thoughtful people on the Hill, managed to resurrect it by trimming its already modest budget (\$20 million out of a \$2 billion budget for the legislative branch) and moving it under the Library of Congress, so that members could claim they had killed one of their own agencies.

Because this might have meant a cut of a few percentage points in the budget available to the library, Librarian of Congress James Billington lobbied hard on the Senate side to prevent the move. The vote in the Senate Appropriations committee was 13 to 11 to kill



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

the agency. Sen. Specter was one of the 13. Several supporting Democrats who were absent neglected to file proxies.

Things went no better on the floor of the Senate, where multiple issues got intertwined, and enforcing party loyalty became the dominant concern. After the vote, in brief remarks from the floor, Sen. Ted Stevens, R-Alaska, a longtime supporter of OTA, sadly expressed his frustration and disappointment that this important little agency had gotten run over in the broader stampede to get an appropriations bill passed.

There was one last chance to save the agency at the end of the week, when the Conference Committee met to resolve differences between the House and Senate bills. Rep. Charles Taylor, R-N.C., who had promised to vote to restore the agency, left the meeting just before the vote was taken. The result was a tie, which under the rules meant OTA died.

Through a comedy of errors, oversight and political machismo, Congress had “chosen” ignorance, and ended the 23-year history of its best and smallest agency.

Copyright © 1995, The Pittsburgh Post-Gazette, all rights reserved.



M. Granger Morgan is professor and head of the Department of Engineering and Public Policy at Carnegie Mellon University.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

Congress's Science Agency Prepares to Close Its Doors

by Warren E. Leary

New York Times

September 24, 1995

p. 26

WASHINGTON, Sept. 21—After more than 20 years of advising lawmakers on the most complex scientific and technical issues, a small Congressional agency will soon cease to exist, but it is vigorously pursuing its mission to the last.

The agency, the Office of Technology Assessment, widely praised for offering impartial advice and analysis to the senators and representatives who must make decisions on technical issues in which they have little expertise, will close on Sept. 30.

Although little known to the public, the agency has had a presence and influence in many of the great scientific debates on Capitol Hill. As Congressmen passed laws and budgets dealing with issues like medical research, climate change, the space program, genetic engineering, telecommunications policy and defense against nuclear weapons, studies by the agency have played pivotal roles.



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

The agency, one of Congress's smallest with a \$22 million annual budget and fewer than 200 employees, fell victim to budget cutting by the Republican majority and, its supporters say, shortsightedness about its value in providing unbiased, understandable advice on complex issues.

Some of the 130 professionals on the agency's staff have already left for other jobs, but most have stayed on and are working to the end to finish studies. Even as they empty desks, pack boxes and circulate resumes, staff members working in offices a few blocks from the Capitol are rushing to complete and distribute as many studies as possible before the deadline.

"We are going to put out 60 to 65 reports this year, compared to the 50 or so we normally release," said Dr. Roger C. Herdman, a doctor who has served as director of the agency since 1993. "It's really a point of pride for many of the people here to finish what they've started and get the reports to the people who asked for them."

Some studies, which normally take 18 months to 2 years to complete and can be hundreds of pages long, will be truncated because of the deadline, he said. Because there is no time to have some printed, he said, they will be distributed in photocopied versions or made available electronically on the Internet.

Several big studies were not far enough along to be finished, Dr. Herdman said, includ-



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

ing reports on the role of the United States in United Nations peacekeeping operations and how to protect against weapons of mass destruction that fall into the hands of third parties like terrorists or small nations that do not have the means to build such arms.

Critics of the agency, including Representative Robert S. Walker, the Pennsylvania Republican who heads the House Science Committee, said that in the past, the agency had taken so long to do its comprehensive studies that they were released after legislation they could influence had been written. Dr. Herdman of the agency admitted that reports sometimes lagged behind legislation, but said agency researchers, when asked, issued shorter interim reports or testified at legislative hearings on the results of the studies in progress.

There are a number of theories about why the agency, which had been highly praised in Government, academic and scientific circles for its analyses and impartiality, lost out in the new effort of Congress to cut the size of its own budget. While some critics said the agency could be cut because its research duplicated work done by other public and private organizations, others said it had become vulnerable because of the way it was set up in 1972 to maintain its political neutrality.

The agency was established during the Nixon Administration to give Congress technical expertise equal to that available to the executive branch through its many departments



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

and agencies.

Sometimes referred to as the think tank for Congress, the agency is overseen by a board with equal numbers of Republicans and Democrats and an even division between senators and representatives. To keep the agency from being overwhelmed with requests for studies and to insure quality, only the board or committee chairmen and ranking members of the minority party could request work. And the agency was prohibited from recommending a single policy after a study, being required instead to lay out different policy options and projecting what the consequences of each might be.

During floor debates, the agency's reports were often quoted by both sides of an issue, supporters say, indicating that the agency was doing its job of supplying factual material to elevate the discussion.

Because the agency tried to be so neutral and because it was insulated from direct contact with most members, proponents say, new committee chairmen and members of Congress brought into power with last year's Republican takeover had little or no knowledge or appreciation of the agency. Without visibility and champions, an agency can quickly find itself in trouble.

"If you belong to everyone, you belong to no one," said Dr. John H. Gibbons, head of the White House Office of Science and Technology Policy. Dr. Gibbons, who headed the



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

technology office for 14 years before becoming President Clinton's science adviser in 1993, said the demise of the agency after it had proved its effectiveness reflected an anti-intellectual and anti-science mentality among some members of Congress who were not interested in looking at issues factually.

"Closing our eyes to issues is a very poor way to plan for our future," Dr. Gibbons said.

Senator Connie Mack, a Florida Republican who helped to lead the effort to kill the agency, and other opponents said its role could be filled by other Congressional fact-finding agencies, like the General Accounting Office, and Congressional Research Service, or private organizations, like the National Academy of Sciences.

But Representative Amo Houghton, a Republican whose New York district includes Elmira, Jamestown and suburban Ithaca, said the information explosion was the problem, not the solution. Mr. Houghton, who would have been chairman of the agency's board if it had survived, led the effort to save it. Obtaining unbiased information for making decisions has become harder, not easier, he said.

"O.T.A. acts as an impartial 'honest broker'" Mr. Houghton said. "Members of Congress are deluged with advice from many quarters, but it is often tinged with the underlying bias and political agenda of the bearer."

Mr. Houghton, who said he favored reducing Government and cutting costs, said some



TECHNOLOGY ASSESSMENT AND THE WORK OF CONGRESS

lawmakers were so anxious to cut down the size of Government that they were not being selective. This shortsightedness, he said, will hurt the nation's ability to mobilize its resources in science and technology and to develop policies that create jobs and economic growth.


“We are cutting off one of the most important arms of Congress when we cut off unbiased knowledge about science and technology,” Mr. Houghton said.

Copyright © 1995, The New York Times, all rights reserved.




OTA PUBLICATIONS

The links below lead to lists of OTA publications, arranged alphabetically, chronologically, and topically. OTA Reports from 1992-1995 are contained on this CD-ROM disk; the reports from earlier years are on other disks in the set.




A → Z

Reports by title



1995 → 1972

Reports by year



Addiction → Workplace

Reports by topic

The body text of the publications is fully searchable (with the exception of notes, captions, and indices). Use the Search command to locate reports containing specific text strings.



OTA PUBLICATIONS

The 1992 World Administrative Radio Conference: Issues for U.S. International Spectrum Policy (November 1991—Disk 2)

The 1992 World Administrative Radio Conference: Technology and Policy Implications (May 1993)

A

Access to Over-the-Road Buses for Persons With Disabilities (May 1993)

Access to Space: The Future of U.S. Space Transportation Systems (April 1990—Disk 2)

Accessibility and Integrity of Networked Information Collections (August 1993)

Acid Rain and Transported Air Pollutants: Implications for Public Policy (May 1984—Disk 4)

Adjusting to a New Security Environment: The Defense Technology and Industrial Base Challenge (February 1991—Disk 2)

Adolescent Health Insurance Status: Analyses of Trends in Coverage and Preliminary Estimates of the Effects of an Employer Mandate and Medicaid Expansion on the Uninsured (June 1989—Disk 2)

Adolescent Health, Vol. I: Summary and Policy Options (April 1991—Disk 2)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Adolescent Health, Vol. II: Background and the Effectiveness of Selected Prevention and Treatment Services (October 1991—Disk 2)
- Adolescent Health, Vol. III: Crosscutting Issues in the Delivery of Health and Related Services (June 1991—Disk 2)
- Adult Literacy and New Technologies: Tools for a Lifetime (July 1993)
- Advanced Automotive Technology: Visions of a Super-Efficient Family Car (September 1995)
- Advanced High-Speed Aircraft (April 1980—Disk 5)
- Advanced Materials by Design (June 1988—Disk 3)
- Advanced Network Technology (June 1993)
- Advanced Vehicle/Highway Systems and Urban Traffic Problems (September 1989—Disk 2)
- Adverse Reactions to HIV Vaccines: Medical, Ethical, and Legal Issues (September 1995)
- Affordable Spacecraft: Design and Launch Alternatives (January 1990—Disk 2)
- Africa Tomorrow: Issues in Technology, Agriculture, and U.S. Foreign Aid (December 1984—Disk 4)
- After the Cold War: Living With Lower Defense Spending (February 1992)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Aging Nuclear Power Plants: Managing Plant Life and Decommissioning (September 1993)
Agricultural Commodities as Industrial Raw Materials (June 1991—Disk 2)
Agricultural Postharvest Technology and Marketing Economics Research (May 1983—Disk 4)
Agricultural Research and Technology Transfer Policies for the 1990s (March 1990—Disk 2)
Agriculture, Trade, and Environment: Achieving Complementary Policies (May 1995)
Aid to Developing Countries: The Technology/Ecology Fit (June 1987—Disk 3)
AIDS and Health Insurance: An OTA Survey (February 1988—Disk 3)
The Air Cargo System (January 1982—Disk 4)
Air Service to Small Communities (February 1982—Disk 4)
Aircraft Evacuation Testing: Research and Technology Issues (September 1993)
Airport and Air Traffic Control System (January 1982—Disk 4)
Airport System Development (August 1984—Disk 4)
An Alaskan Challenge: Native Village Sanitation (May 1994)
Alaskan Water for California?: The Subsea Pipeline Option (January 1992)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Allocating Costs and Benefits in Disease Prevention Programs: An Application to Cervical Cancer Screening (May 1981—Disk 5)
- Alternative Approaches to Cargo Policy: A Supplement to an Assessment of Maritime Trade and Technology (August 1985—Disk 4)
- Alternative Coca Reduction Strategies in the Andean Region (July 1993)
- Alternative Energy Futures: Part I—The Future of Liquefied Natural Gas Imports (March 1980—Disk 5)
- Alternatives to Animal Use in Research, Testing, and Education (February 1986—Disk 3)
- American Military Power: Future Needs, Future Choices (October 1991—Disk 2)
- Analysis of Laws Governing Access Across Federal Lands: Options for Access in Alaska (February 1979—Disk 5)
- An Analysis of the ERDA Plan and Program (October 1978—Disk 5)
- Analysis of the Feasibility of Separating Exploration From Production of Oil and Gas on the Outer Continental Shelf (May 1975—Disk 5)
- Analysis of the Impacts of the Projected Natural Gas Curtailments for the Winter 1975-76 (November 1975—Disk 5)
- Analysis of the Proposed National Energy Plan (August 1977—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1977 (March 1977—Disk 5)

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1976 (March 1976—Disk 5)

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1975 (March 1975—Disk 5)

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1974 (March 1974—Disk 5)

Annual Report to the Congress: Fiscal Year 1984 (March 1985—Disk 4)

Annual Report to the Congress: Fiscal Year 1985 (March 1986—Disk 3)

Annual Report to the Congress: Fiscal Year 1991 (March 1992)

Annual Report to the Congress: Fiscal Year 1993 (March 1994)

Annual Report to the Congress: Fiscal Year 1994 (March 1995)

Annual Report to the Congress: Fiscal Year 1995 (March 1996)

Annual Report to the Congress for 1977 (March 1978—Disk 5)

Annual Report to the Congress for 1978 (March 1979—Disk 5)

Annual Report to the Congress for 1979 (March 1980—Disk 5)

Annual Report to the Congress for 1980 (March 1981—Disk 5)

Annual Report to the Congress for 1981 (March 1982—Disk 4)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Annual Report to the Congress for 1982 (March 1983—Disk 4)
Annual Report to the Congress: January 1 to September 30, 1983 (March 1984—
Disk 4)
Anti-Satellite Weapons, Countermeasures, and Arms Control (September 1985—
Disk 4)
Application of Solar Technology to Today's Energy Needs—Vol. I (June 1978—
Disk 5)
Application of Solar Technology to Today's Energy Needs—Vol. II (September
1978—Disk 5)
Applications of R&D in the Civil Sector: The Opportunity Provided by the Federal
Grant and Cooperative Agreement Act of 1977 (June 1978—Disk 5)
Are We Cleaning Up? 10 Superfund Case Studies (June 1988—Disk 3)
Arming Our Allies: Cooperation and Competition in Defense Technology (May
1990—Disk 2)
Arms Control in Space (May 1984—Disk 4)
The Artificial Heart: Costs, Risks, and Benefits (May 1982—Disk 4)
Artificial Insemination: Practice in the United States: Summary of a 1987 Survey
(August 1988—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Assessing Biological Diversity in the United States: Data Considerations (March 1986—Disk 3)

Assessing Contractor Use in Superfund (January 1989—Disk 2)

Assessing Selected Respiratory Therapy Modalities: Trends and Relative Costs in the Washington, D.C., Area (July 1981—Disk 5)

Assessing the Efficacy and Safety of Medical Technologies (September 1978—Disk 5)

Assessing the Potential for Civil-Military Integration: Selected Case Studies (September 1995)

Assessing the Potential for Civil-Military Integration: Technologies, Processes, and Practices (September 1994)

An Assessment of Alternative Economic Stockpiling Policies (August 1976—Disk 5)

An Assessment of Alternatives for a National Computerized Criminal History System (October 1982—Disk 4)

Assessment of Community Planning for Mass Transit: Volume 10—Washington, D.C. Case Study (February 1976—Disk 5)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Assessment of Community Planning for Mass Transit: Volume 11—Technical Report (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 12—Bibliography (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 2—Atlanta Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 3—Boston Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 4—Chicago Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 5—Denver Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 6—Los Angeles Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 7—Minneapolis-St. Paul Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 8—San Francisco Case Study (February 1976—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

Assessment of Community Planning for Mass Transit: Volume 9—Seattle Case Study (February 1976—Disk 5)

An Assessment of Development and Production Potential of Federal Coal Leases (December 1981—Disk 5)

An Assessment of Information Systems Capabilities Required To Support U.S. Materials Policy Decisions (December 1976—Disk 5)

An Assessment of Maritime Trade and Technology (October 1983—Disk 4)

An Assessment of Oil Shale Technologies (June 1980—Disk 5)

Assessment of Oil Shale Technologies—Vol. II: A History and Analysis of the Federal Prototype Oil Shale Leasing Program (July 1980—Disk 5)

Assessment of Technologies for Determining Cancer Risks From the Environment (June 1981—Disk 5)

An Assessment of Technology for Local Development (January 1981—Disk 5)

An Assessment of the United States Food and Agricultural Research System (December 1981—Disk 5)

Assistive Devices for Severe Speech Impairments (December 1983—Disk 4)

Automated Guideway Transit: An Assessment of PRT and Other New Systems (June 1975—Disk 5)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Automated Record Checks for Firearm Purchasers: Issues and Options (July 1991—Disk 2)
- Automatic Train Control in Rail Rapid Transit (May 1976—Disk 5)
- Automation and the Workplace: Selected Labor, Education, and Training Issues (March 1983—Disk 4)
- Automation of America's Offices, 1985-2000 (December 1985—Disk 4)
- Automobile Collision Data: An Assessment of Needs and Methods of Acquisition (February 1975—Disk 5)

B

- Ballistic Missile Defense Technologies (September 1985—Disk 4)
- Beneath the Bottom Line: Agricultural Approaches To Reduce Agrichemical Contamination of Groundwater (November 1990—Disk 2)
- Benefit Design in Health Care Reform: Clinical Preventive Services (September 1993)
- Benefit Design in Health Care Reform: Patient Cost-Sharing (September 1993)
- Benefit-And-Cost Analysis of Medical Interventions: The Case of Cimetidine and Peptic Ulcer Disease (September 1981—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Benefits of Increased Use of Continuous Casting by the U.S. Steel Industry (October 1979—Disk 5)
- Big Dumb Boosters: A Low-Cost Space Transportation Option? (February 1989—Disk 2)
- The Big Picture: HDTV and High-Resolution Systems (June 1990—Disk 2)
- Biological Components of Substance Abuse and Addiction (September 1993)
- Biological Effects of Power Frequency Electric and Magnetic Fields (May 1989—Disk 2)
- Biological Rhythms: Implications for the Worker (September 1991—Disk 2)
- Biologically Based Technologies for Pest Control (September 1995)
- Biology, Medicine, and the Bill of Rights (September 1988—Disk 3)
- The Biology of Mental Disorders (September 1992)
- Biomedical Ethics in U.S. Public Policy (June 1993)
- Biopolymers: Making Materials Nature's Way (September 1993)
- Bioremediation for Marine Oil Spills (May 1991—Disk 2)
- Biotechnology in a Global Economy (October 1991—Disk 2)
- Blood Policy and Technology (January 1985—Disk 4)
- Book Preservation Technologies (May 1988—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

The Border War on Drugs (March 1987—Disk 3)

The Boston Elbow (November 1984—Disk 4)

Bringing Health Care Online: The Role of Information Technologies (September 1995)

Building Energy Efficiency (May 1992)

Building Future Security: Strategies for Restructuring the Defense Technology and Industrial Base (June 1992)

C

Cancer Testing Technology and Saccharin (October 1977—Disk 5)

Cardiac Radionuclide Imaging and Cost Effectiveness (May 1982—Disk 4)

Catching Our Breath: Next Steps for Reducing Urban Ozone (July 1989—Disk 2)

The CDC's Case Definition of AIDS: Implications of Proposed Revisions (June 1992)

Census of State Government Initiatives for High-Technology Industrial Development (May 1983—Disk 4)

Challenges for U.S. Agricultural Research Policy (September 1995)

Changing by Degrees: Steps To Reduce Greenhouse Gases (February 1991—Disk 2)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



Cont'd...

OTA PUBLICATIONS

- The Chemical Weapons Convention: Effects on the U.S. Chemical Industry (August 1993)
- Children's Dental Services Under the Medicaid Program (October 1990—Disk 2)
- Children's Mental Health: Problems and Services (December 1986—Disk 3)
- Civilian Satellite Remote Sensing: A Strategic Approach (September 1994)
- Civilian Space Policy and Applications (June 1982—Disk 4)
- Civilian Space Stations and the U.S. Future in Space (November 1984—Disk 4)
- Cleaning Up Contaminated Wood-Treating Sites (September 1995)
- Climate Treaties and Models: Issues in the International Management of Climate Change (June 1994)
- Coal Exports and Port Development (April 1981—Disk 5)
- Coastal Effects of Offshore Energy Systems: An Assessment of Oil and Gas Systems, Deepwater Ports, and Nuclear Powerplants Off the Coasts of New Jersey and Delaware (November 1976—Disk 5)
- Combined Summaries: Technologies To Sustain Tropical Forest Resources and Biological Diversity (May 1992)
- Coming Clean: Superfund Problems Can Be Solved... (October 1989—Disk 2)
- Commercial Biotechnology: An International Analysis (January 1984—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Commercial Newsgathering From Space (May 1987—Disk 3)
- Commercializing High-Temperature Superconductivity (June 1988—Disk 3)
- Comparative Analysis of the 1976 ERDA Plan and Program (May 1976—Disk 5)
- Compensation for Vaccine-Related Injuries (November 1980—Disk 5)
- Competing Economies: America, Europe, and the Pacific Rim (October 1991—Disk 2)
- Competition in Coastal Seas: An Evaluation of Foreign Maritime Activities in the 200-Mile EEZ (July 1989—Disk 2)
- Compilation of Abbreviations and Terms (September 1993)
- Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production (February 1991—Disk 2)
- Computer Software and Intellectual Property (March 1990—Disk 2)
- Computer Technology in Medical Education and Assessment (September 1979—Disk 5)
- Computer-Based National Information Systems: Technology and Public Policy Issues (September 1981—Disk 5)
- Computerized Manufacturing Automation: Employment, Education, and the Workplace (April 1984—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Confused Minds, Burdened Families: Finding Help for People With Alzheimer's and Other Dementias (July 1990—Disk 2)
- Conservation and Solar Energy Programs of the Department of Energy: A Critique (June 1980—Disk 5)
- Construction and Materials Research and Development for the Nation's Public Works (June 1987—Disk 3)
- The Contact Lens Industry: Structure, Competition, and Public Policy (December 1984—Disk 4)
- The Containment of Underground Nuclear Explosions (October 1989—Disk 2)
- The Continuing Challenge of Tuberculosis (September 1993)
- Continuing the Commitment: Agricultural Development in the Sahel (August 1986—Disk 3)
- Contributions of DOE Weapons Labs and NIST to Semiconductor Technology (September 1993)
- Coping With an Oiled Sea (March 1990—Disk 2)
- Copper: Technology and Competitiveness (September 1988—Disk 3)
- Copyright and Home Copying: Technology Challenges the Law (October 1989—Disk 2)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Cost Benefit/Cost Effectiveness of Medical Technologies: A Case Study of Orthopedic Joint Implants (September 1981—Disk 5)
- Cost Effectiveness of Automated Multichannel Chemistry Analyzers (May 1981—Disk 5)
- The Cost Effectiveness of Bone Marrow Transplant Therapy and Its Policy Implications (May 1981—Disk 5)
- The Cost Effectiveness of Digital Subtraction Angiography in the Diagnosis of Cerebrovascular Disease (May 1985—Disk 4)
- Cost Effectiveness of Influenza Vaccination (December 1981—Disk 5)
- The Cost Effectiveness of Upper Gastrointestinal Endoscopy (May 1981—Disk 5)
- The Cost-Effectiveness of Colorectal Cancer Screening in Average-Risk Adults (April 1995)
- The Costs and Effectiveness of Cervical Cancer Screening in Elderly Women (February 1990—Disk 2)
- Costs and Effectiveness of Cholesterol Screening in the Elderly (April 1989—Disk 2)
- Costs and Effectiveness of Colorectal Cancer Screening in the Elderly (September 1990—Disk 2)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- The Costs and Effectiveness of Neonatal Intensive Care (August 1981—Disk 5)
The Costs and Effectiveness of Nurse Practitioners (July 1981—Disk 5)
Costs and Effectiveness of Prostate Cancer Screening in Elderly Men (May 1995)
The Costs of AIDS and Other HIV Infections: Review of the Estimates (May 1987—Disk 3)
Coverage of Laser Technology by Health Insurers (September 1995)
Coverage of Preventive Services: Provisions of Selected Current Health Care Reform Proposals (September 1993)
Criminal Justice, New Technologies, and the Constitution (May 1988—Disk 3)
Criteria for Evaluating the Implementation Plan Required By the Earthquake Hazards Reduction Act of 1977 (January 1980—Disk 5)
Critical Connections: Communication for the Future (February 1990—Disk 2)
Current Status of Federal Involvement in U.S. Aquaculture (September 1995)
Cystic Fibrosis and DNA Tests: Implications of Carrier Screening (August 1992)

D

- Data Format Standards for Civilian Remote Sensing Satellites (May 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Defending Secrets, Sharing Data: New Locks and Keys for Electronic Information
(October 1987—Disk 3)

Defense Conversion: Redirecting R&D (May 1993)

The Defense Technology Base: Introduction and Overview (March 1988—Disk 3)

Defensive Medicine and Medical Malpractice (July 1994)

Defining “Rural” Areas: Impact on Health Care Policy and Research (July 1989—
Disk 2)

Delivering the Goods: Public Works Technologies, Management, and Financing
(April 1991—Disk 2)

Demographic Trends and the Scientific and Engineering Workforce (December
1985—Disk 4)

The Department of Defense Kuwait Oil Health Fire Risk Assessment (The “Persian
Gulf Veterans’ Registry”) (September 1994)

The Department of Veterans Affairs Persian Gulf Veterans’ Health Registry (Septem-
ber 1993)

Development Assistance, Export Promotion, and Environmental Technology (Au-
gust 1993)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Development of Medical Technology: Opportunities for Assessment (August 1976—Disk 5)
- Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology (July 1983—Disk 4)
- Difficult-To-Reuse Needles for the Prevention of HIV Infection Among Injecting Drug Abusers (October 1992)
- Dioxin Treatment Technologies (November 1991—Disk 2)
- The Direct Use of Coal (April 1979—Disk 5)
- Directed Energy Missile Defense in Space (April 1984—Disk 4)
- Dismantling the Bomb and Managing the Nuclear Materials (September 1993)
- Displaced Homemakers: Programs and Policy (October 1985—Disk 4)
- Disposal of Chemical Weapons: Alternative Technologies (June 1992)
- Distributed Interactive Simulation of Combat (September 1995)
- Do Insects Transmit AIDS? (September 1987—Disk 3)
- Do Medicaid and Medicare Patients Sue More Often Than Other Patients? (September 1992)
- Does Health Insurance Make a Difference? (September 1992)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Does Vocational Education Help the “Forgotten Half”? Short-term Economic Consequences of High School Vocational Education for Non-College Students (September 1995)

Drug Bioequivalence (July 1974—Disk 5)

Drug Labeling in Developing Countries (February 1993)

Drugs in Livestock Feed (June 1979—Disk 5)

E

Educating Scientists and Engineers: Grade School to Grad School (June 1988—Disk 3)

Education and Technology: Future Visions (September 1995)

The Effectiveness and Costs of Alcoholism Treatment (March 1983—Disk 4)

The Effectiveness and Costs of Continuous Ambulatory Peritoneal Dialysis (CAPD) (September 1985—Disk 4)

Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement Therapy, Vol. I: Cost-Effectiveness Analysis (August 1995)

Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement Therapy, Vol. II: Evidence on Benefits, Risks, and Costs (September 1995)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- The Effectiveness of AIDS Prevention Efforts (September 1995)
The Effectiveness of Drug Abuse Treatment: Implications for Controlling AIDS/HIV Infection (September 1990—Disk 2)
The Effectiveness of Research and Experimentation Tax Credits (September 1995)
Effects of Federal Policies on Extracorporeal Shock Wave Lithotripsy (May 1986—Disk 3)
Effects of Information Technology on Financial Services Systems (September 1984—Disk 4)
The Effects of Nuclear War (May 1979—Disk 5)
The Efficacy and Cost Effectiveness of Psychotherapy (October 1980—Disk 5)
Elective Hysterectomy: Costs, Risks, and Benefits (October 1981—Disk 5)
Electric Power Wheeling and Dealing: Technological Considerations for Increasing Competition (May 1989—Disk 2)
Electronic Bulls and Bears: U.S. Securities Markets and Information Technology (September 1990—Disk 2)
Electronic Delivery of Public Assistance Benefits: Technology Options and Policy Issues (April 1988—Disk 3)
Electronic Enterprises: Looking to the Future (May 1994)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Electronic Record Systems and Individual Privacy (June 1986—Disk 3)
The Electronic Supervisor: New Technology, New Tensions (September 1987—
Disk 3)
Electronic Surveillance and Civil Liberties (October 1985—Disk 4)
Electronic Surveillance in a Digital Age (July 1995)
Elementary and Secondary Education for Science and Engineering (December
1988—Disk 3)
Emerging Food Marketing Technologies: A Preliminary Analysis (October 1978—
Disk 5)
Encouraging High-Technology Development (April 1983—Disk 4)
Energy Efficiency: Challenges and Opportunities for Electric Utilities (September
1993)
Energy Efficiency in Federal Facilities: Update on Funding and Potential Savings
(May 1994)
Energy Efficiency in the Federal Government: Government by Good Example?
(May 1991—Disk 2)
Energy Efficiency of Buildings in Cities (March 1982—Disk 4)
Energy Efficiency Technologies for Central and Eastern Europe (May 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Energy From Biological Processes (July 1980—Disk 5)
Energy from Biological Processes: Volume II—Technical and Environmental Analyses (September 1980—Disk 5)
Energy in Developing Countries (January 1991—Disk 2)
Energy Technology Choices: Shaping Our Future (July 1991—Disk 2)
Energy Technology Transfer to China (September 1985—Disk 4)
Energy, the Economy, and Mass Transit (October 1975—Disk 5)
Energy Use and the U.S. Economy (June 1990—Disk 2)
Engineering Implications of Chronic Materials Scarcity (April 1977—Disk 5)
Enhanced Oil Recovery Potential in the United States (January 1978—Disk 5)
Enhancing Agriculture in Africa: A Role for U.S. Development Assistance (September 1988—Disk 3)
Enhancing the Quality of U.S. Grain for International Trade (February 1989—Disk 2)
Environmental Contaminants in Food (December 1979—Disk 5)
Environmental Issues of Synthetic Transportation Fuels From Coal (December 1982—Disk 4)
Environmental Monitoring for Nuclear Safeguards (September 1995)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Environmental Policy Tools: A User's Guide (September 1995)
Environmental Protection in the Federal Coal Leasing Program (May 1984—Disk 4)
Environmental Technology: Analysis of Selected Federal R&D Programs (July 1995)
EPA Superfund Actions and ATSDR Public Health Data (July 1995)
Establishing a 200-Mile Fisheries Zone (June 1977—Disk 5)
Evaluating Defense Department Research (July 1990—Disk 2)
An Evaluation of Options for Managing Greater-Than-Class-C Low-Level Radioactive Waste (October 1988—Disk 3)
An Evaluation of Railroad Safety (May 1978—Disk 5)
Evaluation of the Oregon Medicaid Proposal (May 1992)
Exploratory Workshop on the Social Impacts of Robotics: Summary and Issues (February 1982—Disk 4)
Exploring the Moon and Mars: Choices for the Nation (July 1991—Disk 2)
Export Controls and Nonproliferation Policy (May 1994)
External Review of the Federal Centers for Disease Control and Prevention's HIV Prevention Program: Summary and Overview (September 1994)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

F

- Facing America's Trash: What Next for Municipal Solid Waste? (October 1989—Disk 2)
- The FBI Fingerprint Identification Automation Program: Issues and Options (November 1991—Disk 2)
- The Feasibility and Value of Broadband Communications in Rural Areas: A Preliminary Evaluation (April 1976—Disk 5)
- The Feasibility of Economic Evaluation of Diagnostic Procedures: The Case of CT Scanning (April 1981—Disk 5)
- Federal and Private Roles in the Development and Provision of Alglucerase Therapy for Gaucher Disease (October 1992)
- Federal Government Information Technology: Management, Security, and Congressional Oversight (February 1986—Disk 3)
- Federal Policies and the Medical Devices Industry (November 1984—Disk 4)
- Federal Research and Technology for Aviation (September 1994)
- Federal Scientific and Technical Information in an Electronic Age: Opportunities and Challenges (October 1989—Disk 2)
- Federal Technology Transfer and the Human Genome Project (September 1995)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Federally Funded Research: Decisions for a Decade (May 1991—Disk 2)
- Financial Viability of Conrail: Review and Analysis (September 1975—Disk 5)
- Financing and Program Alternatives for Advanced High-Speed Aircraft (August 1982—Disk 4)
- Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change (May 1992)
- Finding the Rx for Managing Medical Wastes (October 1990—Disk 2)
- Fish Passage Technologies: Protection at Hydropower Facilities (September 1995)
- Flat Panel Displays in Perspective (September 1995)
- Food Information Systems (February 1976—Disk 5)
- Food Information Systems: Summary and Analysis (August 1976—Disk 5)
- Forecasts of Physician Supply and Requirements (April 1980—Disk 5)
- Foreign Eligibility for U.S. Technology Funding (September 1995)
- Forest Service Planning: Accommodating Uses, Producing Outputs, and Sustaining Ecosystems (February 1992)
- Forest Service Planning: Setting Strategic Direction Under RPA (July 1990—Disk 2)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Formal Analysis, Policy Formulation, and End-Stage Renal Disease (April 1981—Disk 5)
- Four Common X-Ray Procedures: Problems and Prospects for Economic Evaluation (April 1982—Disk 4)
- From Pollution to Prevention: A Progress Report on Waste Reduction (June 1987—Disk 3)
- Fueling Development: Energy Technologies for Developing Countries (April 1992)
- Fueling Reform: Energy Technologies for the Former East Bloc (July 1994)
- The Fusion Energy Program: The Role of TPX and Alternate Concepts (February 1995)
- The Future of Remote Sensing From Space: Civilian Satellite Systems and Applications (July 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z

G

- Gasohol (September 1979—Disk 5)
- Gauging Control Technology and Regulatory Impacts in Occupational Safety and Health: An Appraisal of OSHA's Analytic Approach (September 1995)



OTA PUBLICATIONS

Gearing Up for Safety: Motor Carrier Safety in a Competitive Environment (September 1988—Disk 3)

Genetic Counseling and Cystic Fibrosis Carrier Screening: Results of a Survey (October 1992)

Genetic Monitoring and Screening in the Workplace (October 1990—Disk 2)

Genetic Tests and Health Insurance: Results of a Survey (October 1992)

Genetic Witness: Forensic Uses of DNA Tests (July 1990—Disk 2)

Global Arms Trade: Commerce in Advanced Military Technology and Weapons (June 1991—Disk 2)

Global Change Research and NASA's Earth Observing System (November 1993)

Global Communications: Opportunities for Trade and Aid (September 1995)

Global Models, World Futures, and Public Policy: A Critique (April 1982—Disk 4)

Global Standards: Building Blocks for the Future (March 1992)

Government Involvement in the Innovation Process: A Contractor's Report to the Office of Technology Assessment (August 1978—Disk 5)

Grain Quality in International Trade: A Comparison of Major U.S. Competitors (February 1989—Disk 2)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

Grassroots Conservation of Biological Diversity in the United States (February 1986—Disk 3)

Grassroots Development: The African Development Foundation (June 1988—Disk 3)

Green Products by Design: Choices for a Cleaner Environment (September 1992)

H

Habitability of the Love Canal Area: An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area (June 1983—Disk 4)

Harmful Non-Indigenous Species in the United States (September 1993)

Hazards Ahead: Managing Cleanup Worker Health and Safety at the Nuclear Weapons Complex (February 1993)

Health Care in Rural America (September 1990—Disk 2)

Health Care Technology and Its Assessment in Eight Countries (February 1995)

Health Insurance: The Hawaii Experience (June 1993)

The Health of the Scientific and Technical Enterprise: An Advisory Panel Report to the Office of Technology Assessment (October 1978—Disk 5)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Healthy Children: Investing in the Future (February 1988—Disk 3)
Hearing Impairment and Elderly People (May 1986—Disk 3)
Helping America Compete: The Role of Federal Scientific and Technical Information (June 1990—Disk 2)
The Hemodialysis Equipment and Disposables Industry (December 1984—Disk 4)
High-Performance Computing and Networking for Science (September 1989—Disk 2)
High-Temperature Superconductivity in Perspective (April 1990—Disk 2)
Higher Education for Science and Engineering (March 1989—Disk 2)
Hip Fracture Outcomes in People Age 50 and Over (September 1994)
A History of the Department of Defense Federally Funded Research and Development Centers (June 1995)
HIV in the Health Care Workplace (November 1991—Disk 2)
Holding the Edge: Maintaining the Defense Technology Base (April 1989—Disk 2)
Holding the Edge: Maintaining the Defense Technology Base—Vol. II, Appendices (January 1990—Disk 2)
Home Drug Infusion Therapy Under Medicare (May 1992)
Hospital Financing in Seven Countries (June 1995)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

Hospital Information Systems at the Veterans Administration (September 1987—
Disk 3)

How Effective Is AIDS Education? (June 1988—Disk 3)

How Has Federal Research on AIDS/HIV Disease Contributed to Other Fields?
(April 1990—Disk 2)

Human Gene Therapy (December 1984—Disk 4)

I

Identifying and Controlling Immunotoxic Substances (April 1991—Disk 2)

Identifying and Controlling Pulmonary Toxicants (June 1992)

Identifying and Regulating Carcinogens (November 1987—Disk 3)

Identifying Health Technologies That Work: Searching for Evidence (September
1994)

Impact of a Department of Education on Federal Science and Technology Activities
(August 1978—Disk 5)

Impact of Advanced Group Rapid Transit Technology (January 1980—Disk 5)

The Impact of AIDS on the Kaiser Permanente Medical Care Program (Northern
California Region) (July 1988—Disk 3)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Impact of Health Reform on Rural Areas: Lessons From the States (September 1995)
- Impact of Legal Reforms on Medical Malpractice Costs (September 1993)
- The Impact of Randomized Clinical Trials on Health Policy and Medical Practice (August 1983—Disk 4)
- Impacts of Antibiotic-Resistant Bacteria (September 1995)
- Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals (April 1981—Disk 5)
- Impacts of Neuroscience (March 1984—Disk 4)
- Impacts of Technology on U.S. Cropland and Rangeland Productivity (August 1982—Disk 4)
- The Implications of Cost-Effectiveness Analysis of Medical Technology (August 1980—Disk 5)
- The Implications of Cost-Effectiveness Analysis of Medical Technology: Methodological Issues and Literature Review (September 1980—Disk 5)
- Implications of Electronic Mail and Message Systems for the U.S. Postal Service (August 1982—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Improving Automobile Fuel Economy: New Standards, New Approaches (October 1991—Disk 2)

Improving the Prospects for Future International Peace Operations: Workshop Proceedings (September 1995)

An Inconsistent Picture: A Compilation of Analyses of Economic Impacts of Competing Approaches to Health Care Reform by Experts and Stakeholders (June 1993)

Increased Automobile Fuel Efficiency and Synthetic Fuels: Alternatives for Reducing Oil Imports (September 1982—Disk 4)

Indian Adolescent Mental Health (January 1990—Disk 2)

Indian Health Care (April 1986—Disk 3)

Industrial and Commercial Cogeneration (February 1983—Disk 4)

Industrial Energy Efficiency (August 1993)

Industrial Energy Use (June 1983—Disk 4)

Industry, Technology, and the Environment: Competitive Challenges and Business Opportunities (January 1994)

Infertility: Medical and Social Choices (May 1988—Disk 3)

The Information Content of Premanufacture Notices (April 1983—Disk 4)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Information Security and Privacy in Network Environments (September 1994)
Information Systems Related to Technology Transfer: A Report on Federal Technol-
ogy Transfer in the United States (September 1993)
Information Technologies for the Control of Money Laundering (September 1995)
Information Technology R&D: Critical Trends and Issues (February 1985—Disk 4)
Informational Technology and Its Impact on American Education (November
1982—Disk 4)
Informing the Nation: Federal Information Dissemination in an Electronic Age
(October 1988—Disk 3)
Innovation and Commercialization of Emerging Technologies (September 1995)
Innovative Biological Technologies for Lesser Developed Countries (July 1985—
Disk 4)
Institutional Protocols for Decisions About Life-Sustaining Treatments (July 1988—
Disk 3)
Integrated Renewable Resource Management for U.S. Insular Areas (June 1987—
Disk 3)
Intellectual Property Rights in an Age of Electronics and Information (April 1986—
Disk 3)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



Cont'd...

OTA PUBLICATIONS

Intensive Care Units (ICUs): Clinical Outcomes, Costs, and Decisionmaking (November 1984—Disk 4)

International Comparisons of Administrative Costs in Health Care (September 1994)

International Competition in Services: Banking, Building, Software, Know-How... (July 1987—Disk 3)

International Competitiveness in Electronics (November 1983—Disk 4)

International Cooperation and Competition in Civilian Space Activities (June 1985—Disk 4)

International Health Statistics: What the Numbers Mean for the United States (September 1994)

International Partnerships in Large Science Projects (July 1995)

Issue Update on Information Security and Privacy in Network Environments (September 1995)

Issues and Options in Flood Hazards Management (February 1980—Disk 5)

Issues in Medical Waste Management (October 1988—Disk 3)

L

Launch Options for the Future: A Buyer's Guide (July 1988—Disk 3)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

Learning To Work: Making the Transition From School to Work (September 1995)
Lessons in Restructuring Defense Industry: The French Experience (June 1992)
Life-Sustaining Technologies and the Elderly (July 1987—Disk 3)
Linking for Learning: A New Course for Education (November 1989—Disk 2)
Long-Lived Legacy: Managing High-Level and Transuranic Waste at the DOE
Nuclear Weapons Complex (May 1991—Disk 2)
Losing a Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other
Dementias (April 1987—Disk 3)
The Lower Tiers of the Space Transportation Industrial Base (August 1995)

M

Making Government Work: Electronic Delivery of Federal Services (September
1993)
Making Things Better: Competing in Manufacturing (February 1990—Disk 2)
Managed Care and Competitive Health Care Markets: The Twin Cities Experience
(July 1994)
Management of Fuel and Nonfuel Minerals in Federal Land (April 1979—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- The Management of Health Care Technology in Ten Countries (October 1980—Disk 5)
- Managing Industrial Solid Wastes From Manufacturing, Mining, Oil and Gas Production, and Utility Coal Combustion (March 1992)
- Managing the Nation's Commercial High-Level Radioactive Waste (March 1985—Disk 4)
- Mandatory Passive Restraint Systems in Automobiles: Issues and Evidence (September 1982—Disk 4)
- Mapping Our Genes—Genome Projects: How Big? How Fast? (April 1988—Disk 3)
- Marine Applications for Fuel Cell Technology (February 1986—Disk 3)
- Marine Minerals: Exploring Our New Ocean Frontier (July 1987—Disk 3)
- The Market for Wheelchairs: Innovations and Federal Policy (November 1984—Disk 4)
- Materials and Energy From Municipal Waste (July 1979—Disk 5)
- Medical Devices and the Veterans Administration (February 1985—Disk 4)
- Medical Monitoring and Screening in the Workplace: Results of a Survey (September 1991—Disk 2)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



Cont'd...

OTA PUBLICATIONS

- Medical Technology and the Costs of the Medicare Program (July 1984—Disk 4)
Medical Technology Under Proposals To Increase Competition in Health Care
(October 1982—Disk 4)
Medical Testing and Health Insurance (August 1988—Disk 3)
Medicare's Prospective Payment System: Strategies for Evaluating Cost, Quality,
and Medical Technology (October 1985—Disk 4)
MEDLARS and Health Information Policy (September 1982—Disk 4)
The Menopause, Hormone Therapy, and Women's Health (May 1992)
Mental Disorders and Genetics: Bridging the Gap Between Research and Society
(September 1994)
Microelectronics Research and Development (March 1986—Disk 3)
Miniaturization Technologies (November 1991—Disk 2)
Monitoring Limits on Sea-Launched Cruise Missiles (September 1992)
Moving Ahead: 1991 Surface Transportation Legislation (June 1991—Disk 2)
Multinationals and the National Interest: Playing by Different Rules (September
1993)
Multinationals and the U.S. Technology Base (September 1994)
MX Missile Basing (September 1981—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

N

NASA's Office of Space Science and Applications: Process, Priorities and Goals
(January 1992)

The National Space Transportation Policy: Issues for Congress (June 1995)

Neonatal Intensive Care for Low Birthweight Infants: Costs and Effectiveness
(December 1987—Disk 3)

Neural Grafting: Repairing the Brain and Spinal Cord (October 1990—Disk 2)

Neurotoxicity: Identifying and Controlling Poisons of the Nervous System (April
1990—Disk 2)

New Developments in Biotechnology: Field-Testing Engineered Organisms: Genetic
and Ecological Issues (May 1988—Disk 3)

New Developments in Biotechnology: Ownership of Human Tissues and Cells
(March 1987—Disk 3)

New Developments in Biotechnology: Patenting Life—Special Report (April
1989—Disk 2)

New Developments in Biotechnology: Public Perceptions of Biotechnology (May
1987—Disk 3)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- New Developments in Biotechnology: U.S. Investment in Biotechnology (July 1988—Disk 3)
- New Electric Power Technologies: Problems and Prospects for the 1990s (July 1985—Disk 4)
- New Opportunities for U.S. Universities in Development Assistance: Agriculture, Natural Resources, and Environment (September 1991—Disk 2)
- New Structural Materials Technologies: Opportunities for the Use of Advanced Ceramics and Composites (September 1986—Disk 3)
- A New Technological Era for American Agriculture (August 1992)
- New Technology for NATO: Implementing Follow-On Forces Attack (June 1987—Disk 3)
- New Ways: Tiltrotor Aircraft and Magnetically Levitated Vehicles (September 1991—Disk 2)
- Nonferrous Metals: Industry Structure (September 1990—Disk 2)
- Nonnuclear Industrial Hazardous Waste: Classifying for Hazard Management (November 1981—Disk 5)
- Nuclear Magnetic Resonance Imaging Technology: A Clinical, Industrial, and Policy Analysis (September 1984—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Nuclear Power in an Age of Uncertainty (February 1984—Disk 4)
- Nuclear Powerplant Standardization: Light Water Reactors (April 1981—Disk 5)
- Nuclear Proliferation and Safeguards (June 1977—Disk 5)
- Nuclear Proliferation and Safeguards: Appendix Volume II, Part One (June 1977—Disk 5)
- Nuclear Proliferation and Safeguards: Appendix Volume II, Part Two (June 1977—Disk 5)
- Nuclear Safeguards and the International Atomic Energy Agency (April 1995)
- Nuclear Wastes in the Arctic: An Analysis of Arctic and Other Regional Impacts From Soviet Nuclear Contamination (September 1995)
- Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives: A Policy Analysis (December 1986—Disk 3)
- Nutrition Research Alternatives (September 1978—Disk 5)

O

- Occupational Training for Young People in the United Kingdom (September 1995)
- Ocean Incineration: Its Role in Managing Hazardous Waste (August 1986—Disk 3)
- Ocean Margin Drilling (May 1980—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Oil and Gas Technologies for the Arctic and Deepwater (May 1985—Disk 4)
Oil Production in the Arctic National Wildlife Refuge: The Technology and the Alaskan Oil Context (February 1989—Disk 2)
Oil Transportation by Tankers: An Analysis of Marine Pollution and Safety Measures (July 1975—Disk 5)
Open Shelf-Life Dating of Food (August 1979—Disk 5)
Orbiting Debris: A Space Environmental Problem (October 1990—Disk 2)
Organizing and Financing Basic Research To Increase Food Production (June 1977—Disk 5)
OTA Priorities 1979, With Brief Descriptions of Priorities and of Assessments in Progress (March 1979—Disk 5)
Other Approaches to Civil-Military Integration: The Chinese and Japanese Arms Industries (April 1995)
Outpatient Immunosuppressive Drugs Under Medicare (July 1991—Disk 2)

P

- Partnerships Under Pressure: Managing Commercial Low-Level Radioactive Waste (November 1989—Disk 2)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Passive Smoking in the Workplace: Selected Issues (May 1986—Disk 3)
Patent-Term Extension and the Pharmaceutical Industry (August 1981—Disk 5)
Patterns and Trends in Federal Coal Lease Ownership, 1950-80 (April 1981—
Disk 5)
Paying the Bill: Manufacturing and America's Trade Deficit (June 1988—Disk 3)
Payment for Physician Services: Strategies for Medicare (February 1986—Disk 3)
Performance Standards for Secondary School Vocational Education (April 1989—
Disk 2)
Performance Standards for the Food Stamp Employment and Training Program
(February 1992)
Periodontal Disease: Assessing the Effectiveness and Costs of the Keyes Technique
(May 1981—Disk 5)
Perspectives on Federal Retail Food Grading (June 1977—Disk 5)
Perspectives on the Role of Science and Technology in Sustainable Development
(September 1994)
Pest Management Strategies in Crop Protection (October 1979—Disk 5)
Pesticide Residues in Food: Technologies for Detection (October 1988—Disk 3)
Pharmaceutical R&D: Costs, Risks, and Rewards (February 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Physical Vulnerability of Electric Systems to Natural Disasters and Sabotage (June 1990—Disk 2)
- Plague of Locusts—Special Report (June 1990—Disk 2)
- Plant Closing: Advance Notice and Rapid Response (September 1986—Disk 3)
- Plants: The Potential for Extracting Protein, Medicines, and Other Useful Chemicals (September 1983—Disk 4)
- Polar Prospects: A Minerals Treaty for Antarctica (September 1989—Disk 2)
- Police Body Armor Standards and Testing, Vol. I (August 1992)
- Police Body Armor Standards and Testing, Vol. II—Appendixes (August 1992)
- Policy Implications of Medical Information Systems (December 1977—Disk 5)
- Policy Implications of the Computed Tomography (CT) Scanner (November 1978—Disk 5)
- Policy Implications of the Computed Tomography (CT) Scanner: An Update (January 1981—Disk 5)
- Postmarketing Surveillance of Prescription Drugs (November 1982—Disk 4)
- Potential Effects of Section 3 of the Federal Coal Leasing Amendments Act of 1976 (March 1986—Disk 3)
- Potential Environmental Impacts of Bioenergy Crop Production (September 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Power On! New Tools for Teaching and Learning (September 1988—Disk 3)
- Power Sources for Remote Arctic Applications (June 1994)
- A Preliminary Analysis of the IRS Tax Administration System (March 1977—Disk 5)
- A Preliminary Assessment of the National Crime Information Center and the Computerized Criminal History System (December 1978—Disk 5)
- Preparing for an Uncertain Climate—Vol. I (October 1993)
- Preparing for an Uncertain Climate—Vol. II (October 1993)
- Preparing for Science and Engineering Careers: Field Level Profiles (January 1987—Disk 3)
- Preventing Illness and Injury in the Workplace (April 1985—Disk 4)
- Preventive Health Services for Medicare Beneficiaries: Policy and Research Issues (February 1990—Disk 2)
- Proceedings of the OTA Seminar on the Discrete Address Beacon System (DABS) (July 1980—Disk 5)
- Proceedings: Technology and Governance in the 1990s. Papers Presented at the OTA 20th Anniversary Forum on Technology and Governance in the 1990s (April 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Proliferation and the Former Soviet Union (September 1994)
- Proliferation of Weapons of Mass Destruction: Assessing the Risks (August 1993)
- Proposal Pressure in the 1980s: An Indicator of Stress on the Federal Research System (April 1990—Disk 2)
- Protecting Privacy in Computerized Medical Information (September 1993)
- Protecting the Nation's Groundwater from Contamination—Vol. I (October 1984—Disk 4)
- Protecting the Nation's Groundwater from Contamination—Vol. II (October 1984—Disk 4)
- Psychiatric Disabilities, Employment and the Americans With Disabilities Act (March 1994)
- Public Information About Osteoporosis: What's Available, What's Needed? (September 1994)
- Pulling Together for Productivity: A Union-Management Initiative at US West, Inc. (September 1993)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

Q

- Quality and Relevance of Research and Related Activities at the Gorges Memorial Laboratory (August 1983—Disk 4)
- The Quality of Medical Care: Information for Consumers (June 1988—Disk 3)

R

- R&D in the Maritime Industry: A Supplement to an Assessment of Maritime Trade and Technology (May 1985—Disk 4)
- Radiofrequency Use and Management: Impacts From the World Administrative Radio Conference of 1979 (January 1982—Disk 4)
- Railroad Safety—U.S.-Canadian Comparison (August 1979—Disk 5)
- Rebuilding the Foundations: A Special Report on State and Local Public Works Financing and Management (March 1990—Disk 2)
- Recent Developments in Ocean Thermal Energy (April 1980—Disk 5)
- Recombinant Erythropoietin: Payment Options for Medicare (May 1990—Disk 2)
- Redesigning Defense: Planning the Transition to the Future U.S. Defense Industrial Base (July 1991—Disk 2)
- Reducing Earthquake Losses (September 1995)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Reducing Launch Operation Costs: New Technologies and Practices (September 1988—Disk 3)
- Reducing the Costs of Collecting Meteorological Data: A Workshop Summary (June 1995)
- The Regulatory Environment for Science (February 1986—Disk 3)
- Remote Sensing and the Private Sector: Issues for Discussion (March 1984—Disk 4)
- Remotely Sensed Data From Space: Distribution, Pricing, and Applications (July 1992)
- Remotely Sensed Data: Technology, Management and Markets (September 1994)
- Renewable Ocean Energy Sources: Part I—Ocean Thermal Energy Conversion (May 1978—Disk 5)
- Renewing Our Energy Future (September 1995)
- Replacing Gasoline: Alternative Fuels for Light-Duty Vehicles (September 1990—Disk 2)
- Reproductive Health Hazards in the Workplace (December 1985—Disk 4)
- Reproductive Health Hazards in the Workplace: Selected Aspects of Reproductive Health Hazards Regulations (October 1985—Disk 4)
- Requirements for Fulfilling a National Materials Policy (August 1974—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Research Funding as an Investment: Can We Measure the Returns? (April 1986—Disk 3)
- Researching Health Risks (January 1993)
- Residential Energy Conservation (July 1979—Disk 5)
- Retiring Old Cars: Programs To Save Gasoline and Reduce Emissions (July 1992)
- Review of a Protocol for a Study of Reproductive Health Outcomes Among Women Vietnam Veterans (December 1991—Disk 2)
- A Review of Alternative Approaches to Federal Funding of Rail Rehabilitation (September 1975—Disk 5)
- A Review of National Railroad Issues (December 1975—Disk 5)
- Review of Postal Automation Strategy: A Technical and Decision Analysis (June 1984—Disk 4)
- A Review of Selected Federal Vaccine and Immunization Policies, Based on Case Studies of Pneumococcal Vaccine (September 1979—Disk 5)
- Review of the FAA 1982 National Airspace System Plan (August 1982—Disk 4)
- Review of the Medical Follow-Up Agency (September 1994)
- Review of the Public Health Service's Response to AIDS (February 1985—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

A Review of the U.S. Environmental Protection Agency: Environmental Research Outlook FY 1976 Through 1980 (August 1976—Disk 5)

A Review of U.S. Competitiveness in Agricultural Trade (October 1986—Disk 3)

Risks to Students in School (September 1995)

The Role of Demonstrations in Federal R&D Policy (July 1978—Disk 5)

The Role of Genetic Testing in the Prevention of Occupational Diseases (April 1983—Disk 4)

Round Trip to Orbit: Human Spaceflight Alternatives (August 1989—Disk 2)

Royalty Management Program's Auditing and Financial System: Technical Issues (July 1990—Disk 2)

Rural America at the Crossroads: Networking for the Future (April 1991—Disk 2)

Rural Emergency Medical Services (November 1989—Disk 2)

S

Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment (July 1988—Disk 3)

Safer Skies with TCAS: Traffic Alert and Collision Avoidance System—A Special Report (February 1989—Disk 2)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- The Safety, Efficacy, and Cost Effectiveness of Therapeutic Apheresis (July 1983—Disk 4)
- SALYUT: Soviet Steps Toward Permanent Human Presence in Space (December 1983—Disk 4)
- Saving Energy in U.S. Transportation (July 1994)
- Science and Technology Issues in Coastal Ecotourism (October 1992)
- Science, Technology, and the Constitution (September 1987—Disk 3)
- Science, Technology, and the First Amendment (January 1988—Disk 3)
- Scientific Equipment for Undergraduates: Is It Adequate? (September 1986—Disk 3)
- Scientific Validity of Polygraph Testing: A Research Review and Evaluation (November 1983—Disk 4)
- Screening and Testing Chemicals in Commerce (September 1995)
- Screening for Colon Cancer: A Technology Assessment (April 1981—Disk 5)
- Screening for Open-Angle Glaucoma in the Elderly (October 1988—Disk 3)
- Screening Mammography in Primary Care Settings: Implications for Cost Access and Quality (October 1991—Disk 2)
- SDI: Technology, Survivability, and Software (May 1988—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Seeking Solutions: High Performance Computing for Science (March 1991—Disk 2)
- Seismic Verification of Nuclear Testing Treaties (May 1988—Disk 3)
- Selected Electronic Funds Transfer Issues: Privacy, Security, and Equity (March 1982—Disk 4)
- Selected Technical and Economic Comparisons of Synfuel Options (October 1982—Disk 4)
- Selected Technology Issues in U.S. Aquaculture (September 1995)
- Selected Telecommunications Devices for Hearing-Impaired Persons (December 1982—Disk 4)
- Selected Topics in Federal Health Statistics (June 1979—Disk 5)
- Serious Reduction of Hazardous Waste: for Pollution Prevention and Industrial Efficiency (September 1986—Disk 3)
- The Social Security Administration and Information Technology (October 1986—Disk 3)
- The Social Security Administration's Decentralized Computer Strategy: Issues and Options (April 1994)
- Solar Power Satellites (August 1981—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Space Science Research in the United States (September 1982—Disk 4)
- Space Stations and the Law: Selected Legal Issues (August 1986—Disk 3)
- Special Care Units for People With Alzheimer's and Other Dementias: Consumer Education, Research, Regulatory, and Reimbursement Issues (August 1992)
- Starpower: The U.S. and the International Quest for Fusion Energy (October 1987—Disk 3)
- State Educational Testing Practices (December 1987—Disk 3)
- State of the States on Brownfields: Programs for Cleanup and Reuse of Contaminated Sites (June 1995)
- Statistical Needs for a Changing U.S. Economy (September 1989—Disk 2)
- Status of Biomedical Research and Related Technology for Tropical Diseases (September 1985—Disk 4)
- Status Report on the Gas Potential From Devonian Shales of the Appalachian Basin (November 1977—Disk 5)
- Strategic Materials: Technologies To Reduce U.S. Import Vulnerability (May 1985—Disk 4)
- Strategies for Medical Technology Assessment (September 1982—Disk 4)
- Studies of the Environmental Costs of Electricity (September 1994)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

Supercomputers: Government Plans and Policies (March 1986—Disk 3)

Superfund Strategy (April 1985—Disk 4)

Surgery for Breast Cancer (October 1981—Disk 5)

Sustaining Tropical Forest Resources: Reforestation of Degraded Lands (May 1983—Disk 4)

Sustaining Tropical Forest Resources: U.S. and International Institutions (May 1983—Disk 4)

Synthetic Fuels for Transportation: The Future Potential of Electric and Hybrid Vehicles (March 1982—Disk 4)

T

Taggants in Explosives (April 1980—Disk 5)

Targeting Environmental Priorities in Agriculture: Reforming Program Strategies (September 1995)

Teachers and Technology: Making the Connection (April 1995)

Technical Options for Conservation of Metals: Case Studies of Selected Metals and Products (September 1979—Disk 5)

Technical Options for the Advanced Liquid Metal Reactor (May 1994)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- The Technological Reshaping of Metropolitan America (September 1995)
Technologies and Management Strategies for Hazardous Waste Control (March 1983—Disk 4)
Technologies for Detecting Heritable Mutations in Human Beings (September 1986—Disk 3)
Technologies for Managing Urinary Incontinence (July 1985—Disk 4)
Technologies for NATO's Follow-On Forces Attack Concept (July 1986—Disk 3)
Technologies for Prehistoric and Historic Preservation (September 1986—Disk 3)
Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp (May 1989—Disk 2)
Technologies for the Preservation of Prehistoric and Historic Landscapes (July 1987—Disk 3)
Technologies for Understanding and Preventing Substance Abuse and Addiction (September 1994)
Technologies for Underwater Archaeology and Maritime Preservation (September 1987—Disk 3)
Technologies To Benefit Agriculture and Wildlife (May 1985—Disk 4)
Technologies To Maintain Biological Diversity (March 1987—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Technologies To Sustain Tropical Forest Resources and Biological Diversity (March 1984—Disk 4)
- Technologies Underlying Weapons of Mass Destruction (December 1993)
- Technology Against Terrorism: Structuring Security (January 1992)
- Technology Against Terrorism: The Federal Effort (July 1991—Disk 2)
- Technology and Aging in America (June 1985—Disk 4)
- Technology and East-West Trade (November 1979—Disk 5)
- Technology and East-West Trade: An Update (May 1983—Disk 4)
- Technology and Handicapped People (May 1982—Disk 4)
- Technology and Learning Disabilities (December 1983—Disk 4)
- Technology and Oceanography: An Assessment of Federal Technologies for Oceanographic Research and Monitoring (June 1981—Disk 5)
- Technology and Policy for Suppressing Grain Dust Explosions in Storage Facilities (September 1995)
- Technology and Soviet Energy Availability (November 1981—Disk 5)
- Technology and Steel Industry Competitiveness (June 1980—Disk 5)
- Technology and Structural Unemployment: Reemploying Displaced Adults (February 1986—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Technology and the American Economic Transition: Choices for the Future (May 1988—Disk 3)
- Technology and the Future of the U.S. Construction Industry (August 1984—Disk 4)
- Technology Assessment Activities in the Industrial, Academic, and Governmental Communities (December 1976—Disk 5)
- Technology Assessment in Business and Government (January 1977—Disk 5)
- Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume I: Summary and Findings (February 1979—Disk 5)
- Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume II: Technical Report (February 1979—Disk 5)
- Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume III: Public Participation (October 1979—Disk 5)
- A Technology Assessment of Coal Slurry Pipelines (March 1978—Disk 5)
- Technology Dependent Children: Hospital Vs. Home Care (May 1987—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- Technology, Innovation, and Regional Economic Development (July 1984—Disk 4)
Technology, Public Policy, and the Changing Structure of American Agriculture
(March 1986—Disk 3)
- Technology, Public Policy, and the Changing Structure of American Agriculture: A
Special Report for the 1985 Farm Bill (March 1985—Disk 4)
- Technology, Renewable Resources, and American Crafts (April 1984—Disk 4)
- Technology, Trade, and the U.S. Residential Construction Industry (September
1986—Disk 3)
- Technology Transfer at the National Institutes of Health (March 1982—Disk 4)
- Technology Transfer to China (July 1987—Disk 3)
- Technology Transfer to the Middle East (September 1984—Disk 4)
- Technology Transfer to the United States: The MIT-Japan Science and Technology
Program (April 1989—Disk 2)
- Telecommunications Technology and Native Americans: Opportunities and Chal-
lenges (August 1995)
- Testing and Assessment in Vocational Education (March 1994)
- Testing in American Schools: Asking the Right Questions (February 1992)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

- Tools for Evaluating Health Technologies: Five Background Papers (September 1994)
- Trade Adjustment Assistance: New Ideas for an Old Program (June 1987—Disk 3)
- Trade and Environment: Conflicts and Opportunities (May 1992)
- Trade in Services: Exports and Foreign Revenues (September 1986—Disk 3)
- Trading Around the Clock: Global Securities Markets and Information Technology (July 1990—Disk 2)
- Transportation of Hazardous Materials (July 1986—Disk 3)
- Transportation of Hazardous Materials: State and Local Activities (March 1986—Disk 3)
- Transportation of Liquefied Natural Gas (September 1977—Disk 5)
- Trends and Status of Computers in Schools: Use in Chapter 1 Programs and Use With Limited English Proficient Students (March 1987—Disk 3)

U

- U.S. Banks and International Telecommunications (October 1992)
- U.S. Dairy Industry at a Crossroad: Biotechnology and Policy Choices (May 1991—Disk 2)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- U.S. Disaster Assistance to Developing Countries: Lessons Applicable to U.S. Domestic Disaster Programs (January 1980—Disk 5)
- U.S. Industrial Competitiveness: A Comparison of Steel, Electronics, and Automobiles (July 1981—Disk 5)
- U.S.-Mexico Trade: Pulling Together or Pulling Apart? (September 1992)
- U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000 (September 1983—Disk 4)
- U.S. Natural Gas Availability: Gas Supply Through the Year 2000 (February 1985—Disk 4)
- U.S. Oil Import Vulnerability: The Technical Replacement Capability (October 1991—Disk 2)
- U.S. Oil Production: The Effect of Low Oil Prices (July 1987—Disk 3)
- U.S. Passenger Rail Technologies (December 1983—Disk 4)
- U.S.-Russian Cooperation in Space (May 1995)
- U.S.-Soviet Cooperation in Space (July 1985—Disk 4)
- U.S. Telecommunications Services in European Markets (August 1993)
- The U.S. Textile and Apparel Industry: A Revolution in Progress (April 1987—Disk 3)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

- U.S. Vulnerability to an Oil Import Curtailment (September 1984—Disk 4)
- Unconventional Cancer Treatments (September 1990—Disk 2)
- Understanding Estimates of National Health Expenditures Under Health Reform (May 1994)
- Understanding Estimates of the Impact of Health Reform on the Federal Budget (July 1994)
- UNISPACE '82: A Context for International Cooperation and Competition (March 1983—Disk 4)
- Universal Health Insurance and Uninsured People: Effects on Use and Cost (September 1994)
- Update of Federal Activities Regarding the Use of Pneumococcal Vaccine (May 1984—Disk 4)
- Urban Ozone and the Clean Air Act: Problems and Proposals for Change (April 1988—Disk 3)
- The Use of Integrity Tests for Pre-Employment Screening (September 1990—Disk 2)
- Use of Models for Water Resources Management, Planning, and Policy (August 1982—Disk 4)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



Cont'd...

OTA PUBLICATIONS

The Use of Preventive Services by the Elderly (January 1989—Disk 2)
Using Desalination Technologies for Water Treatment (March 1988—Disk 3)

V

Variations in Hospital Length of Stay: Their Relationship to Health Outcomes
(August 1983—Disk 4)

Verification Technologies: Cooperative Aerial Surveillance in International Agree-
ments (July 1991—Disk 2)

Verification Technologies: Managing Research and Development for Cooperative
Arms Control Monitoring Measures (May 1991—Disk 2)

Verification Technologies: Measures for Monitoring Compliance With the START
Treaty (December 1990—Disk 2)

Virtual Reality and Technologies for Combat Simulation (September 1994)

W

Wage Record Information Systems (May 1994)

Wastes in Marine Environments (April 1987—Disk 3)

Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



OTA PUBLICATIONS

- Water Availability for Synthetic Fuels: An Assessment of Current Studies (October 1982—Disk 4)
- Water for Walker Lake (September 1993)
- Water-Related Technologies for Sustainable Agriculture in Arid/Semiarid Lands: Selected Foreign Experience (May 1983—Disk 4)
- Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands (October 1983—Disk 4)
- Western Surface Mine Permitting and Reclamation (June 1986—Disk 3)
- Wetlands: Their Use and Regulation (March 1984—Disk 4)
- Who Goes There: Friend or Foe? (June 1993)
- Wireless Technologies and the National Information Infrastructure (September 1995)
- Wood Use: U.S. Competitiveness and Technology—Vol. I (August 1983—Disk 4)
- Wood Use: U.S. Competitiveness and Technology—Vol. II (November 1984—Disk 4)
- Worker Training: Competing in the New International Economy (September 1990—Disk 2)
- World Petroleum Availability 1980-2000 (November 1980—Disk 5)

Jump to letter:

A B C D E F
G H I-K L M
N O P Q-R S
T U V-Z



OTA PUBLICATIONS

World Population and Fertility Planning Technologies: The Next 20 Years (February
1982—Disk 4)



Jump to letter:

A B C D E F

G H I-K L M

N O P Q-R S

T U V-Z



1995

The Fusion Energy Program: The Role of TPX and Alternate Concepts (February 1995)

Health Care Technology and Its Assessment in Eight Countries (February 1995)

Annual Report to the Congress: Fiscal Year 1994 (March 1995)

Other Approaches to Civil-Military Integration: The Chinese and Japanese Arms Industries (March 1995)

The Cost-Effectiveness of Colorectal Cancer Screening in Average-Risk Adults (April 1995)

Nuclear Safeguards and the International Atomic Energy Agency (April 1995)

Teachers and Technology: Making the Connection (April 1995)

U.S.-Russian Cooperation in Space (April 1995)

Agriculture, Trade, and Environment: Achieving Complementary Policies (May 1995)

Costs and Effectiveness of Prostate Cancer Screening in Elderly Men (May 1995)

Hospital Financing in Seven Countries (May 1995)

The National Space Transportation Policy: Issues for Congress (May 1995)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- A History of the Department of Defense Federally Funded Research and Development Centers (June 1995)
- Reducing the Costs of Collecting Meteorological Data: A Workshop Summary (June 1995)
- State of the States on Brownfields: Programs for Cleanup and Reuse of Contaminated Sites (June 1995)
- Electronic Surveillance in a Digital Age (July 1995)
- Environmental Technology: Analysis of Selected Federal R&D Programs (July 1995)
- EPA Superfund Actions and ATSDR Public Health Data (July 1995)
- International Partnerships in Large Science Projects (July 1995)
- Coverage of Laser Technology by Health Insurers (August 1995)
- Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement Therapy, Vol. I: Cost-Effectiveness Analysis (August 1995)
- Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement Therapy, Vol. II: Evidence on Benefits, Risks, and Costs (August 1995)
- The Lower Tiers of the Space Transportation Industrial Base (August 1995)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Telecommunications Technology and Native Americans: Opportunities and Challenges (August 1995)
- Advanced Automotive Technology: Visions of a Super-Efficient Family Car (September 1995)
- Adverse Reactions to HIV Vaccines: Medical, Ethical, and Legal Issues (September 1995)
- Assessing the Potential for Civil-Military Integration: Selected Case Studies (September 1995)
- Biologically Based Technologies for Pest Control (September 1995)
- Bringing Health Care Online: The Role of Information Technologies (September 1995)
- Challenges for U.S. Agricultural Research Policy (September 1995)
- Cleaning Up Contaminated Wood-Treating Sites (September 1995)
- Current Status of Federal Involvement in U.S. Aquaculture (September 1995)
- Distributed Interactive Simulation of Combat (September 1995)
- Does Vocational Education Help the "Forgotten Half"?: Short-term Economic Consequences of High School Vocational Education for Non-College Students (September 1995)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Education and Technology: Future Visions (September 1995)
The Effectiveness of AIDS Prevention Efforts (September 1995)
The Effectiveness of Research and Experimentation Tax Credits (September 1995)
Environmental Monitoring for Nuclear Safeguards (September 1995)
Environmental Policy Tools: A User's Guide (September 1995)
Federal Technology Transfer and the Human Genome Project (September 1995)
Fish Passage Technologies: Protection at Hydropower Facilities (September 1995)
Flat Panel Displays in Perspective (September 1995)
Foreign Eligibility for U.S. Technology Funding (September 1995)
Gauging Control Technology and Regulatory Impacts in Occupational Safety and
Health: An Appraisal of OSHA's Analytic Approach (September 1995)
Global Communications: Opportunities for Trade and Aid (September 1995)
Impact of Health Reform on Rural Areas: Lessons From the States (September
1995)
Impacts of Antibiotic-Resistant Bacteria (September 1995)
Improving the Prospects for Future International Peace Operations: Workshop
Proceedings (September 1995)
Information Technologies for the Control of Money Laundering (September 1995)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Innovation and Commercialization of Emerging Technologies (September 1995)
Issue Update on Information Security and Privacy in Network Environments (September 1995)
Learning To Work: Making the Transition From School to Work (September 1995)
Nuclear Wastes in the Arctic: An Analysis of Arctic and Other Regional Impacts
From Soviet Nuclear Contamination (September 1995)
Occupational Training for Young People in the United Kingdom (September 1995)
Reducing Earthquake Losses (September 1995)
Renewing Our Energy Future (September 1995)
Risks to Students in School (September 1995)
Screening and Testing Chemicals in Commerce (September 1995)
Selected Technology Issues in U.S. Aquaculture (September 1995)
Targeting Environmental Priorities in Agriculture: Reforming Program Strategies
(September 1995)
The Technological Reshaping of Metropolitan America (September 1995)
Technology and Policy for Suppressing Grain Dust Explosions in Storage Facilities
(September 1995)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Wireless Technologies and the National Information Infrastructure (September 1995)

Annual Report to the Congress: Fiscal Year 1995 (March 1996)

1994

Industry, Technology, and the Environment: Competitive Challenges and Business Opportunities (January 1994)

Annual Report to the Congress: Fiscal Year 1993 (March 1994)

Psychiatric Disabilities, Employment and the Americans With Disabilities Act (March 1994)

Testing and Assessment in Vocational Education (March 1994)

The Social Security Administration's Decentralized Computer Strategy: Issues and Options (April 1994)

An Alaskan Challenge: Native Village Sanitation (May 1994)

Electronic Enterprises: Looking to the Future (May 1994)

Energy Efficiency in Federal Facilities: Update on Funding and Potential Savings (May 1994)

Export Controls and Nonproliferation Policy (May 1994)

Technical Options for the Advanced Liquid Metal Reactor (May 1994)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



Cont'd...

OTA PUBLICATIONS

Understanding Estimates of National Health Expenditures Under Health Reform
(May 1994)

Wage Record Information Systems (May 1994)

Climate Treaties and Models: Issues in the International Management of Climate
Change (June 1994)

Power Sources for Remote Arctic Applications (June 1994)

Defensive Medicine and Medical Malpractice (July 1994)

Fueling Reform: Energy Technologies for the Former East Bloc (July 1994)

Managed Care and Competitive Health Care Markets: The Twin Cities Experience
(July 1994)

Saving Energy in U.S. Transportation (July 1994)

Understanding Estimates of the Impact of Health Reform on the Federal Budget
(July 1994)

Assessing the Potential for Civil-Military Integration: Technologies, Processes, and
Practices (September 1994)

Civilian Satellite Remote Sensing: A Strategic Approach (September 1994)

The Department of Defense Kuwait Oil Health Fire Risk Assessment (The “Persian
Gulf Veterans’ Registry”) (September 1994)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

External Review of the Federal Centers for Disease Control and Prevention's HIV Prevention Program: Summary and Overview (September 1994)

Federal Research and Technology for Aviation (September 1994)

Hip Fracture Outcomes in People Age 50 and Over (September 1994)

Identifying Health Technologies That Work: Searching for Evidence (September 1994)

Information Security and Privacy in Network Environments (September 1994)

International Comparisons of Administrative Costs in Health Care (September 1994)

International Health Statistics: What the Numbers Mean for the United States (September 1994)

Mental Disorders and Genetics: Bridging the Gap Between Research and Society (September 1994)

Multinationals and the U.S. Technology Base (September 1994)

Perspectives on the Role of Science and Technology in Sustainable Development (September 1994)

Proliferation and the Former Soviet Union (September 1994)

Public Information About Osteoporosis: What's Available, What's Needed? (September 1994)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Remotely Sensed Data: Technology, Management and Markets (September 1994)
Review of the Medical Follow-Up Agency (September 1994)
Studies of the Environmental Costs of Electricity (September 1994)
Technologies for Understanding and Preventing Substance Abuse and Addiction
(September 1994)
Tools for Evaluating Health Technologies: Five Background Papers (September
1994)
Universal Health Insurance and Uninsured People: Effects on Use and Cost (Sep-
tember 1994)
Virtual Reality and Technologies for Combat Simulation (September 1994)

1993

Researching Health Risks (January 1993)
Drug Labeling in Developing Countries (February 1993)
Hazards Ahead: Managing Cleanup Worker Health and Safety at the Nuclear Weap-
ons Complex (February 1993)
Pharmaceutical R&D: Costs, Risks, and Rewards (February 1993)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Proceedings: Technology and Governance in the 1990s. Papers Presented at the OTA 20th Anniversary Forum on Technology and Governance in the 1990s (April 1993)

The 1992 World Administrative Radio Conference: Technology and Policy Implications (May 1993)

Access to Over-the-Road Buses for Persons With Disabilities (May 1993)

Data Format Standards for Civilian Remote Sensing Satellites (May 1993)

Defense Conversion: Redirecting R&D (May 1993)

Energy Efficiency Technologies for Central and Eastern Europe (May 1993)

Advanced Network Technology (June 1993)

Biomedical Ethics in U.S. Public Policy (June 1993)

Health Insurance: The Hawaii Experience (June 1993)

An Inconsistent Picture: A Compilation of Analyses of Economic Impacts of Competing Approaches to Health Care Reform by Experts and Stakeholders (June 1993)

Who Goes There: Friend or Foe? (June 1993)

Adult Literacy and New Technologies: Tools for a Lifetime (July 1993)

Alternative Coca Reduction Strategies in the Andean Region (July 1993)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

The Future of Remote Sensing From Space: Civilian Satellite Systems and Applications (July 1993)

Accessibility and Integrity of Networked Information Collections (August 1993)

The Chemical Weapons Convention: Effects on the U.S. Chemical Industry (August 1993)

Development Assistance, Export Promotion, and Environmental Technology (August 1993)

Industrial Energy Efficiency (August 1993)

Proliferation of Weapons of Mass Destruction: Assessing the Risks (August 1993)

U.S. Telecommunications Services in European Markets (August 1993)

Aging Nuclear Power Plants: Managing Plant Life and Decommissioning (September 1993)

Aircraft Evacuation Testing: Research and Technology Issues (September 1993)

Benefit Design in Health Care Reform: Clinical Preventive Services (September 1993)

Benefit Design in Health Care Reform: Patient Cost-Sharing (September 1993)

Biological Components of Substance Abuse and Addiction (September 1993)

Biopolymers: Making Materials Nature's Way (September 1993)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Compilation of Abbreviations and Terms (September 1993)
The Continuing Challenge of Tuberculosis (September 1993)
Contributions of DOE Weapons Labs and NIST to Semiconductor Technology
(September 1993)
Coverage of Preventive Services: Provisions of Selected Current Health Care Re-
form Proposals (September 1993)
The Department of Veterans Affairs Persian Gulf Veterans' Health Registry (Septem-
ber 1993)
Dismantling the Bomb and Managing the Nuclear Materials (September 1993)
Energy Efficiency: Challenges and Opportunities for Electric Utilities (September
1993)
Harmful Non-Indigenous Species in the United States (September 1993)
Impact of Legal Reforms on Medical Malpractice Costs (September 1993)
Information Systems Related to Technology Transfer: A Report on Federal Technol-
ogy Transfer in the United States (September 1993)
Making Government Work: Electronic Delivery of Federal Services (September
1993)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Multinationals and the National Interest: Playing by Different Rules (September 1993)
Potential Environmental Impacts of Bioenergy Crop Production (September 1993)
Protecting Privacy in Computerized Medical Information (September 1993)
Pulling Together for Productivity: A Union-Management Initiative at US West, Inc. (September 1993)
Water for Walker Lake (September 1993)
Preparing for an Uncertain Climate—Vol. I (October 1993)
Preparing for an Uncertain Climate—Vol. II (October 1993)
Global Change Research and NASA's Earth Observing System (November 1993)
Technologies Underlying Weapons of Mass Destruction (December 1993)

1992

Alaskan Water for California?: The Subsea Pipeline Option (January 1992)
NASA's Office of Space Science and Applications: Process, Priorities and Goals (January 1992)
Technology Against Terrorism: Structuring Security (January 1992)
After the Cold War: Living With Lower Defense Spending (February 1992)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Forest Service Planning: Accommodating Uses, Producing Outputs, and Sustaining Ecosystems (February 1992)
Performance Standards for the Food Stamp Employment and Training Program (February 1992)
Testing in American Schools: Asking the Right Questions (February 1992)
Annual Report to the Congress: Fiscal Year 1991 (March 1992)
Global Standards: Building Blocks for the Future (March 1992)
Managing Industrial Solid Wastes From Manufacturing, Mining, Oil and Gas Production, and Utility Coal Combustion (March 1992)
Fueling Development: Energy Technologies for Developing Countries (April 1992)
Building Energy Efficiency (May 1992)
Combined Summaries: Technologies To Sustain Tropical Forest Resources and Biological Diversity (May 1992)
Evaluation of the Oregon Medicaid Proposal (May 1992)
Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change (May 1992)
Home Drug Infusion Therapy Under Medicare (May 1992)
The Menopause, Hormone Therapy, and Women's Health (May 1992)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Trade and Environment: Conflicts and Opportunities (May 1992)
Building Future Security: Strategies for Restructuring the Defense Technology and Industrial Base (June 1992)
The CDC's Case Definition of AIDS: Implications of Proposed Revisions (June 1992)
Disposal of Chemical Weapons: Alternative Technologies (June 1992)
Identifying and Controlling Pulmonary Toxicants (June 1992)
Lessons in Restructuring Defense Industry: The French Experience (June 1992)
Remotely Sensed Data From Space: Distribution, Pricing, and Applications (July 1992)
Retiring Old Cars: Programs To Save Gasoline and Reduce Emissions (July 1992)
Cystic Fibrosis and DNA Tests: Implications of Carrier Screening (August 1992)
A New Technological Era for American Agriculture (August 1992)
Police Body Armor Standards and Testing, Vol. I (August 1992)
Police Body Armor Standards and Testing, Vol. II—Appendixes (August 1992)
Special Care Units for People With Alzheimer's and Other Dementias: Consumer Education, Research, Regulatory, and Reimbursement Issues (August 1992)
The Biology of Mental Disorders (September 1992)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Do Medicaid and Medicare Patients Sue More Often Than Other Patients? (September 1992)

Does Health Insurance Make a Difference? (September 1992)

Green Products by Design: Choices for a Cleaner Environment (September 1992)

Monitoring Limits on Sea-Launched Cruise Missiles (September 1992)

U.S.-Mexico Trade: Pulling Together or Pulling Apart? (September 1992)

Difficult-To-Reuse Needles for the Prevention of HIV Infection Among Injecting Drug Abusers (October 1992)

Federal and Private Roles in the Development and Provision of Alglucerase Therapy for Gaucher Disease (October 1992)

Genetic Counseling and Cystic Fibrosis Carrier Screening: Results of a Survey (October 1992)

Genetic Tests and Health Insurance: Results of a Survey (October 1992)

Science and Technology Issues in Coastal Ecotourism (October 1992)

U.S. Banks and International Telecommunications (October 1992)

1991

Energy in Developing Countries (January 1991—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Adjusting to a New Security Environment: The Defense Technology and Industrial Base Challenge (February 1991—Disk 2)
- Changing by Degrees: Steps To Reduce Greenhouse Gases (February 1991—Disk 2)
- Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production (February 1991—Disk 2)
- Seeking Solutions: High Performance Computing for Science (March 1991—Disk 2)
- Adolescent Health, Vol. I: Summary and Policy Options (April 1991—Disk 2)
- Delivering the Goods: Public Works Technologies, Management, and Financing (April 1991—Disk 2)
- Identifying and Controlling Immunotoxic Substances (April 1991—Disk 2)
- Rural America at the Crossroads: Networking for the Future (April 1991—Disk 2)
- Bioremediation for Marine Oil Spills (May 1991—Disk 2)
- Energy Efficiency in the Federal Government: Government by Good Example? (May 1991—Disk 2)
- Federally Funded Research: Decisions for a Decade (May 1991—Disk 2)
- Long-Lived Legacy: Managing High-Level and Transuranic Waste at the DOE Nuclear Weapons Complex (May 1991—Disk 2)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- U.S. Dairy Industry at a Crossroad: Biotechnology and Policy Choices (May 1991—Disk 2)
- Verification Technologies: Managing Research and Development for Cooperative Arms Control Monitoring Measures (May 1991—Disk 2)
- Adolescent Health, Vol. III: Crosscutting Issues in the Delivery of Health and Related Services (June 1991—Disk 2)
- Agricultural Commodities as Industrial Raw Materials (June 1991—Disk 2)
- Global Arms Trade: Commerce in Advanced Military Technology and Weapons (June 1991—Disk 2)
- Moving Ahead: 1991 Surface Transportation Legislation (June 1991—Disk 2)
- Automated Record Checks for Firearm Purchasers: Issues and Options (July 1991—Disk 2)
- Energy Technology Choices: Shaping Our Future (July 1991—Disk 2)
- Exploring the Moon and Mars: Choices for the Nation (July 1991—Disk 2)
- Outpatient Immunosuppressive Drugs Under Medicare (July 1991—Disk 2)
- Redesigning Defense: Planning the Transition to the Future U.S. Defense Industrial Base (July 1991—Disk 2)
- Technology Against Terrorism: The Federal Effort (July 1991—Disk 2)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Verification Technologies: Cooperative Aerial Surveillance in International Agreements (July 1991—Disk 2)

Biological Rhythms: Implications for the Worker (September 1991—Disk 2)

Medical Monitoring and Screening in the Workplace: Results of a Survey (September 1991—Disk 2)

New Opportunities for U.S. Universities in Development Assistance: Agriculture, Natural Resources, and Environment (September 1991—Disk 2)

New Ways: Tiltrotor Aircraft and Magnetically Levitated Vehicles (September 1991—Disk 2)

Adolescent Health, Vol. II: Background and the Effectiveness of Selected Prevention and Treatment Services (October 1991—Disk 2)

American Military Power: Future Needs, Future Choices (October 1991—Disk 2)

Biotechnology in a Global Economy (October 1991—Disk 2)

Competing Economies: America, Europe, and the Pacific Rim (October 1991—Disk 2)

Improving Automobile Fuel Economy: New Standards, New Approaches (October 1991—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Screening Mammography in Primary Care Settings: Implications for Cost Access and Quality (October 1991—Disk 2)

U.S. Oil Import Vulnerability: The Technical Replacement Capability (October 1991—Disk 2)

The 1992 World Administrative Radio Conference: Issues for U.S. International Spectrum Policy (November 1991—Disk 2)

Dioxin Treatment Technologies (November 1991—Disk 2)

The FBI Fingerprint Identification Automation Program: Issues and Options (November 1991—Disk 2)

HIV in the Health Care Workplace (November 1991—Disk 2)

Miniaturization Technologies (November 1991—Disk 2)

Review of a Protocol for a Study of Reproductive Health Outcomes Among Women Vietnam Veterans (December 1991—Disk 2)

1990

Affordable Spacecraft: Design and Launch Alternatives (January 1990—Disk 2)

Holding the Edge: Maintaining the Defense Technology Base—Vol. II, Appendices (January 1990—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Indian Adolescent Mental Health (January 1990—Disk 2)
The Costs and Effectiveness of Cervical Cancer Screening in Elderly Women (February 1990—Disk 2)
Critical Connections: Communication for the Future (February 1990—Disk 2)
Making Things Better: Competing in Manufacturing (February 1990—Disk 2)
Preventive Health Services for Medicare Beneficiaries: Policy and Research Issues (February 1990—Disk 2)
Agricultural Research and Technology Transfer Policies for the 1990s (March 1990—Disk 2)
Computer Software and Intellectual Property (March 1990—Disk 2)
Coping With an Oiled Sea (March 1990—Disk 2)
Rebuilding the Foundations: A Special Report on State and Local Public Works Financing and Management (March 1990—Disk 2)
Access to Space: The Future of U.S. Space Transportation Systems (April 1990—Disk 2)
High-Temperature Superconductivity in Perspective (April 1990—Disk 2)
How Has Federal Research on AIDS/HIV Disease Contributed to Other Fields? (April 1990—Disk 2)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Neurotoxicity: Identifying and Controlling Poisons of the Nervous System (April 1990—Disk 2)

Proposal Pressure in the 1980s: An Indicator of Stress on the Federal Research System (April 1990—Disk 2)

Arming Our Allies: Cooperation and Competition in Defense Technology (May 1990—Disk 2)

Recombinant Erythropoietin: Payment Options for Medicare (May 1990—Disk 2)

The Big Picture: HDTV and High-Resolution Systems (June 1990—Disk 2)

Energy Use and the U.S. Economy (June 1990—Disk 2)

Helping America Compete: The Role of Federal Scientific and Technical Information (June 1990—Disk 2)

Physical Vulnerability of Electric Systems to Natural Disasters and Sabotage (June 1990—Disk 2)

Plague of Locusts—Special Report (June 1990—Disk 2)

Confused Minds, Burdened Families: Finding Help for People With Alzheimer's and Other Dementias (July 1990—Disk 2)

Evaluating Defense Department Research (July 1990—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Forest Service Planning: Setting Strategic Direction Under RPA (July 1990—Disk 2)

Genetic Witness: Forensic Uses of DNA Tests (July 1990—Disk 2)

Royalty Management Program's Auditing and Financial System: Technical Issues (July 1990—Disk 2)

Trading Around the Clock: Global Securities Markets and Information Technology (July 1990—Disk 2)

Costs and Effectiveness of Colorectal Cancer Screening in the Elderly (September 1990—Disk 2)

The Effectiveness of Drug Abuse Treatment: Implications for Controlling AIDS/HIV Infection (September 1990—Disk 2)

Electronic Bulls and Bears: U.S. Securities Markets and Information Technology (September 1990—Disk 2)

Health Care in Rural America (September 1990—Disk 2)

Nonferrous Metals: Industry Structure (September 1990—Disk 2)

Replacing Gasoline: Alternative Fuels for Light-Duty Vehicles (September 1990—Disk 2)

Unconventional Cancer Treatments (September 1990—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- The Use of Integrity Tests for Pre-Employment Screening (September 1990—Disk 2)
Worker Training: Competing in the New International Economy (September 1990—Disk 2)
Children's Dental Services Under the Medicaid Program (October 1990—Disk 2)
Finding the Rx for Managing Medical Wastes (October 1990—Disk 2)
Genetic Monitoring and Screening in the Workplace (October 1990—Disk 2)
Neural Grafting: Repairing the Brain and Spinal Cord (October 1990—Disk 2)
Orbiting Debris: A Space Environmental Problem (October 1990—Disk 2)
Beneath the Bottom Line: Agricultural Approaches To Reduce Agrichemical Contamination of Groundwater (November 1990—Disk 2)
Verification Technologies: Measures for Monitoring Compliance With the START Treaty (December 1990—Disk 2)

1989

- Assessing Contractor Use in Superfund (January 1989—Disk 2)
The Use of Preventive Services by the Elderly (January 1989—Disk 2)

Jump to year:
95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Big Dumb Boosters: A Low-Cost Space Transportation Option? (February 1989—Disk 2)

Enhancing the Quality of U.S. Grain for International Trade (February 1989—Disk 2)

Grain Quality in International Trade: A Comparison of Major U.S. Competitors (February 1989—Disk 2)

Oil Production in the Arctic National Wildlife Refuge: The Technology and the Alaskan Oil Context (February 1989—Disk 2)

Safer Skies with TCAS: Traffic Alert and Collision Avoidance System—A Special Report (February 1989—Disk 2)

Higher Education for Science and Engineering (March 1989—Disk 2)

Costs and Effectiveness of Cholesterol Screening in the Elderly (April 1989—Disk 2)

Holding the Edge: Maintaining the Defense Technology Base (April 1989—Disk 2)

New Developments in Biotechnology: Patenting Life—Special Report (April 1989—Disk 2)

Performance Standards for Secondary School Vocational Education (April 1989—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Technology Transfer to the United States: The MIT-Japan Science and Technology Program (April 1989—Disk 2)
- Biological Effects of Power Frequency Electric and Magnetic Fields (May 1989—Disk 2)
- Electric Power Wheeling and Dealing: Technological Considerations for Increasing Competition (May 1989—Disk 2)
- Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp (May 1989—Disk 2)
- Adolescent Health Insurance Status: Analyses of Trends in Coverage and Preliminary Estimates of the Effects of an Employer Mandate and Medicaid Expansion on the Uninsured (June 1989—Disk 2)
- Catching Our Breath: Next Steps for Reducing Urban Ozone (July 1989—Disk 2)
- Competition in Coastal Seas: An Evaluation of Foreign Maritime Activities in the 200-Mile EEZ (July 1989—Disk 2)
- Defining “Rural” Areas: Impact on Health Care Policy and Research (July 1989—Disk 2)
- Round Trip to Orbit: Human Spaceflight Alternatives (August 1989—Disk 2)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Advanced Vehicle/Highway Systems and Urban Traffic Problems (September 1989—Disk 2)

High-Performance Computing and Networking for Science (September 1989—Disk 2)

Polar Prospects: A Minerals Treaty for Antarctica (September 1989—Disk 2)

Statistical Needs for a Changing U.S. Economy (September 1989—Disk 2)

Coming Clean: Superfund Problems Can Be Solved... (October 1989—Disk 2)

The Containment of Underground Nuclear Explosions (October 1989—Disk 2)

Copyright and Home Copying: Technology Challenges the Law (October 1989—Disk 2)

Facing America's Trash: What Next for Municipal Solid Waste? (October 1989—Disk 2)

Federal Scientific and Technical Information in an Electronic Age: Opportunities and Challenges (October 1989—Disk 2)

Linking for Learning: A New Course for Education (November 1989—Disk 2)

Partnerships Under Pressure: Managing Commercial Low-Level Radioactive Waste (November 1989—Disk 2)

Rural Emergency Medical Services (November 1989—Disk 2)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

1988

- Science, Technology, and the First Amendment (January 1988—Disk 3)
- AIDS and Health Insurance: An OTA Survey (February 1988—Disk 3)
- Healthy Children: Investing in the Future (February 1988—Disk 3)
- The Defense Technology Base: Introduction and Overview (March 1988—Disk 3)
- Using Desalination Technologies for Water Treatment (March 1988—Disk 3)
- Electronic Delivery of Public Assistance Benefits: Technology Options and Policy Issues (April 1988—Disk 3)
- Mapping Our Genes—Genome Projects: How Big? How Fast? (April 1988—Disk 3)
- Urban Ozone and the Clean Air Act: Problems and Proposals for Change (April 1988—Disk 3)
- Book Preservation Technologies (May 1988—Disk 3)
- Criminal Justice, New Technologies, and the Constitution (May 1988—Disk 3)
- Infertility: Medical and Social Choices (May 1988—Disk 3)
- New Developments in Biotechnology: Field-Testing Engineered Organisms: Genetic and Ecological Issues (May 1988—Disk 3)
- SDI: Technology, Survivability, and Software (May 1988—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



Cont'd...

OTA PUBLICATIONS

- Seismic Verification of Nuclear Testing Treaties (May 1988—Disk 3)
Technology and the American Economic Transition: Choices for the Future (May 1988—Disk 3)
Advanced Materials by Design (June 1988—Disk 3)
Are We Cleaning Up? 10 Superfund Case Studies (June 1988—Disk 3)
Commercializing High-Temperature Superconductivity (June 1988—Disk 3)
Educating Scientists and Engineers: Grade School to Grad School (June 1988—Disk 3)
Grassroots Development: The African Development Foundation (June 1988—Disk 3)
How Effective Is AIDS Education? (June 1988—Disk 3)
Paying the Bill: Manufacturing and America's Trade Deficit (June 1988—Disk 3)
The Quality of Medical Care: Information for Consumers (June 1988—Disk 3)
The Impact of AIDS on the Kaiser Permanente Medical Care Program (Northern California Region) (July 1988—Disk 3)
Institutional Protocols for Decisions About Life-Sustaining Treatments (July 1988—Disk 3)
Launch Options for the Future: A Buyer's Guide (July 1988—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- New Developments in Biotechnology: U.S. Investment in Biotechnology (July 1988—Disk 3)
- Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment (July 1988—Disk 3)
- Artificial Insemination: Practice in the United States: Summary of a 1987 Survey (August 1988—Disk 3)
- Medical Testing and Health Insurance (August 1988—Disk 3)
- Biology, Medicine, and the Bill of Rights (September 1988—Disk 3)
- Copper: Technology and Competitiveness (September 1988—Disk 3)
- Enhancing Agriculture in Africa: A Role for U.S. Development Assistance (September 1988—Disk 3)
- Gearing Up for Safety: Motor Carrier Safety in a Competitive Environment (September 1988—Disk 3)
- Power On! New Tools for Teaching and Learning (September 1988—Disk 3)
- Reducing Launch Operation Costs: New Technologies and Practices (September 1988—Disk 3)
- An Evaluation of Options for Managing Greater-Than-Class-C Low-Level Radioactive Waste (October 1988—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Informing the Nation: Federal Information Dissemination in an Electronic Age
(October 1988—Disk 3)

Issues in Medical Waste Management (October 1988—Disk 3)

Pesticide Residues in Food: Technologies for Detection (October 1988—Disk 3)

Screening for Open-Angle Glaucoma in the Elderly (October 1988—Disk 3)

Elementary and Secondary Education for Science and Engineering (December
1988—Disk 3)

1987

Preparing for Science and Engineering Careers: Field Level Profiles (January
1987—Disk 3)

The Border War on Drugs (March 1987—Disk 3)

New Developments in Biotechnology: Ownership of Human Tissues and Cells
(March 1987—Disk 3)

Technologies To Maintain Biological Diversity (March 1987—Disk 3)

Trends and Status of Computers in Schools: Use in Chapter 1 Programs and Use
With Limited English Proficient Students (March 1987—Disk 3)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Losing a Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other Dementias (April 1987—Disk 3)
- The U.S. Textile and Apparel Industry: A Revolution in Progress (April 1987—Disk 3)
- Wastes in Marine Environments (April 1987—Disk 3)
- Commercial Newsgathering From Space (May 1987—Disk 3)
- The Costs of AIDS and Other HIV Infections: Review of the Estimates (May 1987—Disk 3)
- New Developments in Biotechnology: Public Perceptions of Biotechnology (May 1987—Disk 3)
- Technology Dependent Children: Hospital Vs. Home Care (May 1987—Disk 3)
- Aid to Developing Countries: The Technology/Ecology Fit (June 1987—Disk 3)
- Construction and Materials Research and Development for the Nation's Public Works (June 1987—Disk 3)
- From Pollution to Prevention: A Progress Report on Waste Reduction (June 1987—Disk 3)
- Integrated Renewable Resource Management for U.S. Insular Areas (June 1987—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- New Technology for NATO: Implementing Follow-On Forces Attack (June 1987—Disk 3)
- Trade Adjustment Assistance: New Ideas for an Old Program (June 1987—Disk 3)
- International Competition in Services: Banking, Building, Software, Know-How... (July 1987—Disk 3)
- Life-Sustaining Technologies and the Elderly (July 1987—Disk 3)
- Marine Minerals: Exploring Our New Ocean Frontier (July 1987—Disk 3)
- Technologies for the Preservation of Prehistoric and Historic Landscapes (July 1987—Disk 3)
- Technology Transfer to China (July 1987—Disk 3)
- U.S. Oil Production: The Effect of Low Oil Prices (July 1987—Disk 3)
- Do Insects Transmit AIDS? (September 1987—Disk 3)
- The Electronic Supervisor: New Technology, New Tensions (September 1987—Disk 3)
- Hospital Information Systems at the Veterans Administration (September 1987—Disk 3)
- Science, Technology, and the Constitution (September 1987—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Technologies for Underwater Archaeology and Maritime Preservation (September 1987—Disk 3)

Defending Secrets, Sharing Data: New Locks and Keys for Electronic Information (October 1987—Disk 3)

Starpower: The U.S. and the International Quest for Fusion Energy (October 1987—Disk 3)

Identifying and Regulating Carcinogens (November 1987—Disk 3)

Neonatal Intensive Care for Low Birthweight Infants: Costs and Effectiveness (December 1987—Disk 3)

State Educational Testing Practices (December 1987—Disk 3)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74

1986

Alternatives to Animal Use in Research, Testing, and Education (February 1986—Disk 3)

Federal Government Information Technology: Management, Security, and Congressional Oversight (February 1986—Disk 3)

Grassroots Conservation of Biological Diversity in the United States (February 1986—Disk 3)



OTA PUBLICATIONS

- Marine Applications for Fuel Cell Technology (February 1986—Disk 3)
Payment for Physician Services: Strategies for Medicare (February 1986—Disk 3)
The Regulatory Environment for Science (February 1986—Disk 3)
Technology and Structural Unemployment: Reemploying Displaced Adults (February 1986—Disk 3)
Annual Report to the Congress: Fiscal Year 1985 (March 1986—Disk 3)
Assessing Biological Diversity in the United States: Data Considerations (March 1986—Disk 3)
Microelectronics Research and Development (March 1986—Disk 3)
Potential Effects of Section 3 of the Federal Coal Leasing Amendments Act of 1976 (March 1986—Disk 3)
Supercomputers: Government Plans and Policies (March 1986—Disk 3)
Technology, Public Policy, and the Changing Structure of American Agriculture (March 1986—Disk 3)
Transportation of Hazardous Materials: State and Local Activities (March 1986—Disk 3)
Indian Health Care (April 1986—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Intellectual Property Rights in an Age of Electronics and Information (April 1986—Disk 3)
- Research Funding as an Investment: Can We Measure the Returns? (April 1986—Disk 3)
- Effects of Federal Policies on Extracorporeal Shock Wave Lithotripsy (May 1986—Disk 3)
- Hearing Impairment and Elderly People (May 1986—Disk 3)
- Passive Smoking in the Workplace: Selected Issues (May 1986—Disk 3)
- Electronic Record Systems and Individual Privacy (June 1986—Disk 3)
- Western Surface Mine Permitting and Reclamation (June 1986—Disk 3)
- Technologies for NATO's Follow-On Forces Attack Concept (July 1986—Disk 3)
- Transportation of Hazardous Materials (July 1986—Disk 3)
- Continuing the Commitment: Agricultural Development in the Sahel (August 1986—Disk 3)
- Ocean Incineration: Its Role in Managing Hazardous Waste (August 1986—Disk 3)
- Space Stations and the Law: Selected Legal Issues (August 1986—Disk 3)
- New Structural Materials Technologies: Opportunities for the Use of Advanced Ceramics and Composites (September 1986—Disk 3)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Plant Closing: Advance Notice and Rapid Response (September 1986—Disk 3)

Scientific Equipment for Undergraduates: Is It Adequate? (September 1986—
Disk 3)

Serious Reduction of Hazardous Waste: for Pollution Prevention and Industrial
Efficiency (September 1986—Disk 3)

Technologies for Detecting Heritable Mutations in Human Beings (September
1986—Disk 3)

Technologies for Prehistoric and Historic Preservation (September 1986—Disk 3)

Technology, Trade, and the U.S. Residential Construction Industry (September
1986—Disk 3)

Trade in Services: Exports and Foreign Revenues (September 1986—Disk 3)

A Review of U.S. Competitiveness in Agricultural Trade (October 1986—Disk 3)

The Social Security Administration and Information Technology (October 1986—
Disk 3)

Children's Mental Health: Problems and Services (December 1986—Disk 3)

Analysis (December 1986—Disk 3)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

1985

- Blood Policy and Technology (January 1985—Disk 4)
- Information Technology R&D: Critical Trends and Issues (February 1985—Disk 4)
- Medical Devices and the Veterans Administration (February 1985—Disk 4)
- Review of the Public Health Service's Response to AIDS (February 1985—Disk 4)
- U.S. Natural Gas Availability: Gas Supply Through the Year 2000 (February 1985—Disk 4)
- Annual Report to the Congress: Fiscal Year 1984 (March 1985—Disk 4)
- Managing the Nation's Commercial High-Level Radioactive Waste (March 1985—Disk 4)
- Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill (March 1985—Disk 4)
- Preventing Illness and Injury in the Workplace (April 1985—Disk 4)
- Superfund Strategy (April 1985—Disk 4)
- The Cost Effectiveness of Digital Subtraction Angiography in the Diagnosis of Cerebrovascular Disease (May 1985—Disk 4)
- Oil and Gas Technologies for the Arctic and Deepwater (May 1985—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- R&D in the Maritime Industry: A Supplement to an Assessment of Maritime Trade and Technology (May 1985—Disk 4)
- Strategic Materials: Technologies To Reduce U.S. Import Vulnerability (May 1985—Disk 4)
- Technologies To Benefit Agriculture and Wildlife (May 1985—Disk 4)
- International Cooperation and Competition in Civilian Space Activities (June 1985—Disk 4)
- Technology and Aging in America (June 1985—Disk 4)
- Innovative Biological Technologies for Lesser Developed Countries (July 1985—Disk 4)
- New Electric Power Technologies: Problems and Prospects for the 1990s (July 1985—Disk 4)
- Technologies for Managing Urinary Incontinence (July 1985—Disk 4)
- U.S.-Soviet Cooperation in Space (July 1985—Disk 4)
- Alternative Approaches to Cargo Policy: A Supplement to an Assessment of Maritime Trade and Technology (August 1985—Disk 4)
- Anti-Satellite Weapons, Countermeasures, and Arms Control (September 1985—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Ballistic Missile Defense Technologies (September 1985—Disk 4)
- The Effectiveness and Costs of Continuous Ambulatory Peritoneal Dialysis (CAPD) (September 1985—Disk 4)
- Energy Technology Transfer to China (September 1985—Disk 4)
- Status of Biomedical Research and Related Technology for Tropical Diseases (September 1985—Disk 4)
- Displaced Homemakers: Programs and Policy (October 1985—Disk 4)
- Electronic Surveillance and Civil Liberties (October 1985—Disk 4)
- Medicare's Prospective Payment System: Strategies for Evaluating Cost, Quality, and Medical Technology (October 1985—Disk 4)
- Reproductive Health Hazards in the Workplace: Selected Aspects of Reproductive Health Hazards Regulations (October 1985—Disk 4)
- Automation of America's Offices, 1985-2000 (December 1985—Disk 4)
- Demographic Trends and the Scientific and Engineering Workforce (December 1985—Disk 4)
- Reproductive Health Hazards in the Workplace (December 1985—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



1984

Commercial Biotechnology: An International Analysis (January 1984—Disk 4)

Nuclear Power in an Age of Uncertainty (February 1984—Disk 4)

Annual Report to the Congress: January 1 to September 30, 1983 (March 1984—Disk 4)

Impacts of Neuroscience (March 1984—Disk 4)

Remote Sensing and the Private Sector: Issues for Discussion (March 1984—Disk 4)

Technologies To Sustain Tropical Forest Resources and Biological Diversity (March 1984—Disk 4)

Wetlands: Their Use and Regulation (March 1984—Disk 4)

Computerized Manufacturing Automation: Employment, Education, and the Workplace (April 1984—Disk 4)

Directed Energy Missile Defense in Space (April 1984—Disk 4)

Technology, Renewable Resources, and American Crafts (April 1984—Disk 4)

Acid Rain and Transported Air Pollutants: Implications for Public Policy (May 1984—Disk 4)

Arms Control in Space (May 1984—Disk 4)

Environmental Protection in the Federal Coal Leasing Program (May 1984—Disk 4)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Update of Federal Activities Regarding the Use of Pneumococcal Vaccine (May 1984—Disk 4)
- Review of Postal Automation Strategy: A Technical and Decision Analysis (June 1984—Disk 4)
- Medical Technology and the Costs of the Medicare Program (July 1984—Disk 4)
- Technology, Innovation, and Regional Economic Development (July 1984—Disk 4)
- Airport System Development (August 1984—Disk 4)
- Technology and the Future of the U.S. Construction Industry (August 1984—Disk 4)
- Effects of Information Technology on Financial Services Systems (September 1984—Disk 4)
- Nuclear Magnetic Resonance Imaging Technology: A Clinical, Industrial, and Policy Analysis (September 1984—Disk 4)
- Technology Transfer to the Middle East (September 1984—Disk 4)
- U.S. Vulnerability to an Oil Import Curtailment (September 1984—Disk 4)
- Protecting the Nation's Groundwater from Contamination—Vol. I (October 1984—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Protecting the Nation's Groundwater from Contamination—Vol. II (October 1984—Disk 4)

The Boston Elbow (November 1984—Disk 4)

Civilian Space Stations and the U.S. Future in Space (November 1984—Disk 4)

Federal Policies and the Medical Devices Industry (November 1984—Disk 4)

Intensive Care Units (ICUs): Clinical Outcomes, Costs, and Decisionmaking (November 1984—Disk 4)

The Market for Wheelchairs: Innovations and Federal Policy (November 1984—Disk 4)

Wood Use: U.S. Competitiveness and Technology—Vol. II (November 1984—Disk 4)

Africa Tomorrow: Issues in Technology, Agriculture, and U.S. Foreign Aid (December 1984—Disk 4)

The Contact Lens Industry: Structure, Competition, and Public Policy (December 1984—Disk 4)

The Hemodialysis Equipment and Disposables Industry (December 1984—Disk 4)

Human Gene Therapy (December 1984—Disk 4)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



1983

- Industrial and Commercial Cogeneration (February 1983—Disk 4)
- Annual Report to the Congress for 1982 (March 1983—Disk 4)
- Automation and the Workplace: Selected Labor, Education, and Training Issues (March 1983—Disk 4)
- The Effectiveness and Costs of Alcoholism Treatment (March 1983—Disk 4)
- Technologies and Management Strategies for Hazardous Waste Control (March 1983—Disk 4)
- UNISPACE '82: A Context for International Cooperation and Competition (March 1983—Disk 4)
- Encouraging High-Technology Development (April 1983—Disk 4)
- The Information Content of Premanufacture Notices (April 1983—Disk 4)
- The Role of Genetic Testing in the Prevention of Occupational Diseases (April 1983—Disk 4)
- Agricultural Postharvest Technology and Marketing Economics Research (May 1983—Disk 4)
- Census of State Government Initiatives for High-Technology Industrial Development (May 1983—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Sustaining Tropical Forest Resources: Reforestation of Degraded Lands (May 1983—Disk 4)

Sustaining Tropical Forest Resources: U.S. and International Institutions (May 1983—Disk 4)

Technology and East-West Trade: An Update (May 1983—Disk 4)

Water-Related Technologies for Sustainable Agriculture in Arid/Semiarid Lands: Selected Foreign Experience (May 1983—Disk 4)

Habitability of the Love Canal Area: An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area (June 1983—Disk 4)

Industrial Energy Use (June 1983—Disk 4)

Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology (July 1983—Disk 4)

The Safety, Efficacy, and Cost Effectiveness of Therapeutic Apheresis (July 1983—Disk 4)

The Impact of Randomized Clinical Trials on Health Policy and Medical Practice (August 1983—Disk 4)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Quality and Relevance of Research and Related Activities at the Gorges Memorial Laboratory (August 1983—Disk 4)
- Variations in Hospital Length of Stay: Their Relationship to Health Outcomes (August 1983—Disk 4)
- Wood Use: U.S. Competitiveness and Technology—Vol. I (August 1983—Disk 4)
- Plants: The Potential for Extracting Protein, Medicines, and Other Useful Chemicals (September 1983—Disk 4)
- U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000 (September 1983—Disk 4)
- An Assessment of Maritime Trade and Technology (October 1983—Disk 4)
- Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands (October 1983—Disk 4)
- International Competitiveness in Electronics (November 1983—Disk 4)
- Scientific Validity of Polygraph Testing: A Research Review and Evaluation (November 1983—Disk 4)
- Assistive Devices for Severe Speech Impairments (December 1983—Disk 4)
- SALYUT: Soviet Steps Toward Permanent Human Presence in Space (December 1983—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Technology and Learning Disabilities (December 1983—Disk 4)
U.S. Passenger Rail Technologies (December 1983—Disk 4)

1982

The Air Cargo System (January 1982—Disk 4)
Airport and Air Traffic Control System (January 1982—Disk 4)
Radiofrequency Use and Management: Impacts From the World Administrative
Radio Conference of 1979 (January 1982—Disk 4)
Air Service to Small Communities (February 1982—Disk 4)
Exploratory Workshop on the Social Impacts of Robotics: Summary and Issues
(February 1982—Disk 4)
World Population and Fertility Planning Technologies: The Next 20 Years (February
1982—Disk 4)
Annual Report to the Congress for 1981 (March 1982—Disk 4)
Energy Efficiency of Buildings in Cities (March 1982—Disk 4)
Selected Electronic Funds Transfer Issues: Privacy, Security, and Equity (March
1982—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Synthetic Fuels for Transportation: The Future Potential of Electric and Hybrid Vehicles (March 1982—Disk 4)
- Technology Transfer at the National Institutes of Health (March 1982—Disk 4)
- Four Common X-Ray Procedures: Problems and Prospects for Economic Evaluation (April 1982—Disk 4)
- Global Models, World Futures, and Public Policy: A Critique (April 1982—Disk 4)
- The Artificial Heart: Costs, Risks, and Benefits (May 1982—Disk 4)
- Cardiac Radionuclide Imaging and Cost Effectiveness (May 1982—Disk 4)
- Technology and Handicapped People (May 1982—Disk 4)
- Civilian Space Policy and Applications (June 1982—Disk 4)
- Financing and Program Alternatives for Advanced High-Speed Aircraft (August 1982—Disk 4)
- Impacts of Technology on U.S. Cropland and Rangeland Productivity (August 1982—Disk 4)
- Implications of Electronic Mail and Message Systems for the U.S. Postal Service (August 1982—Disk 4)
- Review of the FAA 1982 National Airspace System Plan (August 1982—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Use of Models for Water Resources Management, Planning, and Policy (August 1982—Disk 4)
- Increased Automobile Fuel Efficiency and Synthetic Fuels: Alternatives for Reducing Oil Imports (September 1982—Disk 4)
- Mandatory Passive Restraint Systems in Automobiles: Issues and Evidence (September 1982—Disk 4)
- MEDLARS and Health Information Policy (September 1982—Disk 4)
- Space Science Research in the United States (September 1982—Disk 4)
- Strategies for Medical Technology Assessment (September 1982—Disk 4)
- An Assessment of Alternatives for a National Computerized Criminal History System (October 1982—Disk 4)
- Medical Technology Under Proposals To Increase Competition in Health Care (October 1982—Disk 4)
- Selected Technical and Economic Comparisons of Synfuel Options (October 1982—Disk 4)
- Water Availability for Synthetic Fuels: An Assessment of Current Studies (October 1982—Disk 4)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Informational Technology and Its Impact on American Education (November 1982—Disk 4)
- Postmarketing Surveillance of Prescription Drugs (November 1982—Disk 4)
- Environmental Issues of Synthetic Transportation Fuels From Coal (December 1982—Disk 4)
- Selected Telecommunications Devices for Hearing-Impaired Persons (December 1982—Disk 4)

1981

- An Assessment of Technology for Local Development (January 1981—Disk 5)
- Policy Implications of the Computed Tomography (CT) Scanner: An Update (January 1981—Disk 5)
- Annual Report to the Congress for 1980 (March 1981—Disk 5)
- Coal Exports and Port Development (April 1981—Disk 5)
- The Feasibility of Economic Evaluation of Diagnostic Procedures: The Case of CT Scanning (April 1981—Disk 5)
- Formal Analysis, Policy Formulation, and End-Stage Renal Disease (April 1981—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals (April 1981—Disk 5)
- Nuclear Powerplant Standardization: Light Water Reactors (April 1981—Disk 5)
- Patterns and Trends in Federal Coal Lease Ownership, 1950-80 (April 1981—Disk 5)
- Screening for Colon Cancer: A Technology Assessment (April 1981—Disk 5)
- Allocating Costs and Benefits in Disease Prevention Programs: An Application to Cervical Cancer Screening (May 1981—Disk 5)
- Cost Effectiveness of Automated Multichannel Chemistry Analyzers (May 1981—Disk 5)
- The Cost Effectiveness of Bone Marrow Transplant Therapy and Its Policy Implications (May 1981—Disk 5)
- The Cost Effectiveness of Upper Gastrointestinal Endoscopy (May 1981—Disk 5)
- Periodontal Disease: Assessing the Effectiveness and Costs of the Keyes Technique (May 1981—Disk 5)
- Assessment of Technologies for Determining Cancer Risks From the Environment (June 1981—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Technology and Oceanography: An Assessment of Federal Technologies for Oceanographic Research and Monitoring (June 1981—Disk 5)
- Assessing Selected Respiratory Therapy Modalities: Trends and Relative Costs in the Washington, D.C., Area (July 1981—Disk 5)
- The Costs and Effectiveness of Nurse Practitioners (July 1981—Disk 5)
- U.S. Industrial Competitiveness: A Comparison of Steel, Electronics, and Automobiles (July 1981—Disk 5)
- The Costs and Effectiveness of Neonatal Intensive Care (August 1981—Disk 5)
- Patent-Term Extension and the Pharmaceutical Industry (August 1981—Disk 5)
- Solar Power Satellites (August 1981—Disk 5)
- Benefit-And-Cost Analysis of Medical Interventions: The Case of Cimetidine and Peptic Ulcer Disease (September 1981—Disk 5)
- Computer-Based National Information Systems: Technology and Public Policy Issues (September 1981—Disk 5)
- Cost Benefit/Cost Effectiveness of Medical Technologies: A Case Study of Orthopedic Joint Implants (September 1981—Disk 5)
- MX Missile Basing (September 1981—Disk 5)
- Elective Hysterectomy: Costs, Risks, and Benefits (October 1981—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Surgery for Breast Cancer (October 1981—Disk 5)
- Nonnuclear Industrial Hazardous Waste: Classifying for Hazard Management (November 1981—Disk 5)
- Technology and Soviet Energy Availability (November 1981—Disk 5)
- An Assessment of Development and Production Potential of Federal Coal Leases (December 1981—Disk 5)
- An Assessment of the United States Food and Agricultural Research System (December 1981—Disk 5)
- Cost Effectiveness of Influenza Vaccination (December 1981—Disk 5)

1980

- Criteria for Evaluating the Implementation Plan Required By the Earthquake Hazards Reduction Act of 1977 (January 1980—Disk 5)
- Impact of Advanced Group Rapid Transit Technology (January 1980—Disk 5)
- U.S. Disaster Assistance to Developing Countries: Lessons Applicable to U.S. Domestic Disaster Programs (January 1980—Disk 5)
- Issues and Options in Flood Hazards Management (February 1980—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

- Alternative Energy Futures: Part I—The Future of Liquefied Natural Gas Imports
(March 1980—Disk 5)
- Annual Report to the Congress for 1979 (March 1980—Disk 5)
- Advanced High-Speed Aircraft (April 1980—Disk 5)
- Forecasts of Physician Supply and Requirements (April 1980—Disk 5)
- Recent Developments in Ocean Thermal Energy (April 1980—Disk 5)
- Taggants in Explosives (April 1980—Disk 5)
- Ocean Margin Drilling (May 1980—Disk 5)
- An Assessment of Oil Shale Technologies (June 1980—Disk 5)
- Conservation and Solar Energy Programs of the Department of Energy: A Critique
(June 1980—Disk 5)
- Technology and Steel Industry Competitiveness (June 1980—Disk 5)
- Assessment of Oil Shale Technologies—Vol. II: A History and Analysis of the
Federal Prototype Oil Shale Leasing Program (July 1980—Disk 5)
- Energy From Biological Processes (July 1980—Disk 5)
- Proceedings of the OTA Seminar on the Discrete Address Beacon System (DABS)
(July 1980—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

The Implications of Cost-Effectiveness Analysis of Medical Technology (August 1980—Disk 5)

Energy from Biological Processes: Volume II—Technical and Environmental Analyses (September 1980—Disk 5)

The Implications of Cost-Effectiveness Analysis of Medical Technology: Methodological Issues and Literature Review (September 1980—Disk 5)

The Efficacy and Cost Effectiveness of Psychotherapy (October 1980—Disk 5)

The Management of Health Care Technology in Ten Countries (October 1980—Disk 5)

Compensation for Vaccine-Related Injuries (November 1980—Disk 5)

World Petroleum Availability 1980-2000 (November 1980—Disk 5)

1979

Analysis of Laws Governing Access Across Federal Lands: Options for Access in Alaska (February 1979—Disk 5)

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume I: Summary and Findings (February 1979—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume II: Technical Report (February 1979—Disk 5)

Annual Report to the Congress for 1978 (March 1979—Disk 5)

OTA Priorities 1979, With Brief Descriptions of Priorities and of Assessments in Progress (March 1979—Disk 5)

The Direct Use of Coal (April 1979—Disk 5)

Management of Fuel and Nonfuel Minerals in Federal Land (April 1979—Disk 5)

The Effects of Nuclear War (May 1979—Disk 5)

Drugs in Livestock Feed (June 1979—Disk 5)

Selected Topics in Federal Health Statistics (June 1979—Disk 5)

Materials and Energy From Municipal Waste (July 1979—Disk 5)

Residential Energy Conservation (July 1979—Disk 5)

Open Shelf-Life Dating of Food (August 1979—Disk 5)

Railroad Safety—U.S.-Canadian Comparison (August 1979—Disk 5)

Computer Technology in Medical Education and Assessment (September 1979—Disk 5)

Gasohol (September 1979—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- A Review of Selected Federal Vaccine and Immunization Policies, Based on Case Studies of Pneumococcal Vaccine (September 1979—Disk 5)
Technical Options for Conservation of Metals: Case Studies of Selected Metals and Products (September 1979—Disk 5)
Benefits of Increased Use of Continuous Casting by the U.S. Steel Industry (October 1979—Disk 5)
Pest Management Strategies in Crop Protection (October 1979—Disk 5)
Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume III: Public Participation (October 1979—Disk 5)
Technology and East-West Trade (November 1979—Disk 5)
Environmental Contaminants in Food (December 1979—Disk 5)

1978

- Enhanced Oil Recovery Potential in the United States (January 1978—Disk 5)
Annual Report to the Congress for 1977 (March 1978—Disk 5)
A Technology Assessment of Coal Slurry Pipelines (March 1978—Disk 5)
An Evaluation of Railroad Safety (May 1978—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Renewable Ocean Energy Sources: Part I—Ocean Thermal Energy Conversion (May 1978—Disk 5)

Application of Solar Technology to Today's Energy Needs—Vol. I (June 1978—Disk 5)

Applications of R&D in the Civil Sector: The Opportunity Provided by the Federal Grant and Cooperative Agreement Act of 1977 (June 1978—Disk 5)

The Role of Demonstrations in Federal R&D Policy (July 1978—Disk 5)

Government Involvement in the Innovation Process: A Contractor's Report to the Office of Technology Assessment (August 1978—Disk 5)

Impact of a Department of Education on Federal Science and Technology Activities (August 1978—Disk 5)

Application of Solar Technology to Today's Energy Needs—Vol. II (September 1978—Disk 5)

Assessing the Efficacy and Safety of Medical Technologies (September 1978—Disk 5)

Nutrition Research Alternatives (September 1978—Disk 5)

An Analysis of the ERDA Plan and Program (October 1978—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Emerging Food Marketing Technologies: A Preliminary Analysis (October 1978—Disk 5)
The Health of the Scientific and Technical Enterprise: An Advisory Panel Report to the Office of Technology Assessment (October 1978—Disk 5)
Policy Implications of the Computed Tomography (CT) Scanner (November 1978—Disk 5)
A Preliminary Assessment of the National Crime Information Center and the Computerized Criminal History System (December 1978—Disk 5)

1977

- Technology Assessment in Business and Government (January 1977—Disk 5)
Annual Report to the Congress by the Office of Technology Assessment: March 15, 1977 (March 1977—Disk 5)
A Preliminary Analysis of the IRS Tax Administration System (March 1977—Disk 5)
Engineering Implications of Chronic Materials Scarcity (April 1977—Disk 5)
Establishing a 200-Mile Fisheries Zone (June 1977—Disk 5)
Nuclear Proliferation and Safeguards (June 1977—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Nuclear Proliferation and Safeguards: Appendix Volume II, Part One (June 1977—Disk 5)

Nuclear Proliferation and Safeguards: Appendix Volume II, Part Two (June 1977—Disk 5)

Organizing and Financing Basic Research To Increase Food Production (June 1977—Disk 5)

Perspectives on Federal Retail Food Grading (June 1977—Disk 5)

Analysis of the Proposed National Energy Plan (August 1977—Disk 5)

Transportation of Liquefied Natural Gas (September 1977—Disk 5)

Cancer Testing Technology and Saccharin (October 1977—Disk 5)

Status Report on the Gas Potential From Devonian Shales of the Appalachian Basin (November 1977—Disk 5)

Policy Implications of Medical Information Systems (December 1977—Disk 5)

1976

Assessment of Community Planning for Mass Transit: Volume 10—Washington, D.C. Case Study (February 1976—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

- Assessment of Community Planning for Mass Transit: Volume 11—Technical Report (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 12—Bibliography (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 2—Atlanta Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 3—Boston Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 4—Chicago Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 5—Denver Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 6—Los Angeles Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 7—Minneapolis-St. Paul Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 8—San Francisco Case Study (February 1976—Disk 5)

Jump to year:

95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



OTA PUBLICATIONS

Assessment of Community Planning for Mass Transit: Volume 9—Seattle Case Study (February 1976—Disk 5)

Food Information Systems (February 1976—Disk 5)

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1976 (March 1976—Disk 5)

The Feasibility and Value of Broadband Communications in Rural Areas: A Preliminary Evaluation (April 1976—Disk 5)

Automatic Train Control in Rail Rapid Transit (May 1976—Disk 5)

Comparative Analysis of the 1976 ERDA Plan and Program (May 1976—Disk 5)

An Assessment of Alternative Economic Stockpiling Policies (August 1976—Disk 5)

Development of Medical Technology: Opportunities for Assessment (August 1976—Disk 5)

Food Information Systems: Summary and Analysis (August 1976—Disk 5)

A Review of the U.S. Environmental Protection Agency: Environmental Research Outlook FY 1976 Through 1980 (August 1976—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Coastal Effects of Offshore Energy Systems: An Assessment of Oil and Gas Systems, Deepwater Ports, and Nuclear Powerplants Off the Coasts of New Jersey and Delaware (November 1976—Disk 5)

An Assessment of Information Systems Capabilities Required To Support U.S. Materials Policy Decisions (December 1976—Disk 5)

Technology Assessment Activities in the Industrial, Academic, and Governmental Communities (December 1976—Disk 5)

1975

Automobile Collision Data: An Assessment of Needs and Methods of Acquisition (February 1975—Disk 5)

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1975 (March 1975—Disk 5)

Analysis of the Feasibility of Separating Exploration From Production of Oil and Gas on the Outer Continental Shelf (May 1975—Disk 5)

Automated Guideway Transit: An Assessment of PRT and Other New Systems (June 1975—Disk 5)

Jump to year:

95 94 93 92 91

90 89 88 87 86

85 84 83 82 81

80 79 78 77 76

75 74



OTA PUBLICATIONS

Oil Transportation by Tankers: An Analysis of Marine Pollution and Safety Measures (July 1975—Disk 5)

Financial Viability of Conrail: Review and Analysis (September 1975—Disk 5)

A Review of Alternative Approaches to Federal Funding of Rail Rehabilitation (September 1975—Disk 5)

Energy, the Economy, and Mass Transit (October 1975—Disk 5)

Analysis of the Impacts of the Projected Natural Gas Curtailments for the Winter 1975-76 (November 1975—Disk 5)

A Review of National Railroad Issues (December 1975—Disk 5)

1974

Annual Report to the Congress by the Office of Technology Assessment: March 15, 1974 (March 1974—Disk 5)

Drug Bioequivalence (July 1974—Disk 5)

Requirements for Fulfilling a National Materials Policy (August 1974—Disk 5)



Jump to year:
95 94 93 92 91
90 89 88 87 86
85 84 83 82 81
80 79 78 77 76
75 74



Addiction

See *Substance abuse and addiction*

Aging

See also *Alzheimer's disease and other dementias; Cancer; Disabilities; Health and health technology; Osteoporosis*

Costs and Effectiveness of Cholesterol Screening in the Elderly (April 1989—
Disk 2)

The Use of Preventive Services by the Elderly (January 1989—Disk 2)

Institutional Protocols for Decisions About Life-Sustaining Treatments (July 1988—
Disk 3)

Screening for Open-Angle Glaucoma in the Elderly (October 1988—Disk 3)

Life-Sustaining Technologies and the Elderly (July 1987—Disk 3)

Technology and Aging in America (June 1985—Disk 4)

Agricultural technology

See also *Biological research and technology; Competitiveness;*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Environmental protection; Foods and nutrition; Insect and pest management technology; International relations and technology transfer; Research and development

Agriculture, Trade, and Environment: Achieving Complementary Policies (May 1995)

Challenges for U.S. Agricultural Research Policy (September 1995)

Targeting Environmental Priorities in Agriculture: Reforming Program Strategies (September 1995)

Technology and Policy for Suppressing Grain Dust Explosions in Storage Facilities (September 1995)

Potential Environmental Impacts of Bioenergy Crop Production (September 1993)

A New Technological Era for American Agriculture (August 1992)

Agricultural Commodities as Industrial Raw Materials (June 1991—Disk 2)

U.S. Dairy Industry at a Crossroad: Biotechnology and Policy Choices (May 1991—Disk 2)

Agricultural Research and Technology Transfer Policies for the 1990s (March 1990—Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Enhancing Agriculture in Africa: A Role for U.S. Development Assistance (September 1988—Disk 3)
- Using Desalination Technologies for Water Treatment (March 1988—Disk 3)
- Integrated Renewable Resource Management for U.S. Insular Areas (June 1987—Disk 3)
- Continuing the Commitment: Agricultural Development in the Sahel (August 1986—Disk 3)
- Technology, Public Policy, and the Changing Structure of American Agriculture (March 1986—Disk 3)
- Technologies To Benefit Agriculture and Wildlife (May 1985—Disk 4)
- Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill (March 1985—Disk 4)
- Agricultural Postharvest Technology and Marketing Economics Research (May 1983—Disk 4)
- Plants: The Potential for Extracting Protein, Medicines, and Other Useful Chemicals (September 1983—Disk 4)
- Water-Related Technologies for Sustainable Agriculture in Arid/Semiarid Lands: Selected Foreign Experience (May 1983—Disk 4)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Cont'd...

OTA PUBLICATIONS

Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands (October 1983—Disk 4)

Impacts of Technology on U.S. Cropland and Rangeland Productivity (August 1982—Disk 4)

An Assessment of the United States Food and Agricultural Research System (December 1981—Disk 5)

Drugs in Livestock Feed (June 1979—Disk 5)

Organizing and Financing Basic Research To Increase Food Production (June 1977—Disk 5)

AIDS/HIV infection

*See also **Health and health technology; Research and development***

Adverse Reactions to HIV Vaccines: Medical, Ethical, and Legal Issues (September 1995)

The Effectiveness of AIDS Prevention Efforts (September 1995)

External Review of the Federal Centers for Disease Control and Prevention's HIV Prevention Program: Summary and Overview (September 1994)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

The CDC's Case Definition of AIDS: Implications of Proposed Revisions (June 1992)

Difficult-To-Reuse Needles for the Prevention of HIV Infection Among Injecting Drug Abusers (October 1992)

HIV in the Health Care Workplace (November 1991—Disk 2)

The Effectiveness of Drug Abuse Treatment: Implications for Controlling AIDS/HIV Infection (September 1990—Disk 2)

How Has Federal Research on AIDS/HIV Disease Contributed to Other Fields? (April 1990—Disk 2)

AIDS and Health Insurance: An OTA Survey (February 1988—Disk 3)

How Effective Is AIDS Education? (June 1988—Disk 3)

The Impact of AIDS on the Kaiser Permanente Medical Care Program (Northern California Region) (July 1988—Disk 3)

The Costs of AIDS and Other HIV Infections: Review of the Estimates (May 1987—Disk 3)

Do Insects Transmit AIDS? (September 1987—Disk 3)

Review of the Public Health Service's Response to AIDS (February 1985—Disk 4)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Air pollution

See *Environmental protection*

Alcoholism and alcohol abuse

See *Health and health technology; Substance abuse and addiction*

Alternative fuels

See also *Climate change; Energy efficiency; Energy technology; Environmental protection; Oceans and oceanography; Oil, gas, and mineral resources; Transportation*

Replacing Gasoline: Alternative Fuels for Light-Duty Vehicles (September 1990—Disk 2)

Environmental Issues of Synthetic Transportation Fuels From Coal (December 1982—Disk 4)

Increased Automobile Fuel Efficiency and Synthetic Fuels: Alternatives for Reducing Oil Imports (September 1982—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Selected Technical and Economic Comparisons of Synfuel Options (October 1982—Disk 4)

Synthetic Fuels for Transportation: The Future Potential of Electric and Hybrid Vehicles (March 1982—Disk 4)

Water Availability for Synthetic Fuels: An Assessment of Current Studies (October 1982—Disk 4)

Gasohol (September 1979—Disk 5)

Alzheimer's disease and other dementias

*See also **Aging; Biological research and technology; Mental health***

Special Care Units for People With Alzheimer's and Other Dementias: Consumer Education, Research, Regulatory, and Reimbursement Issues (August 1992)

Confused Minds, Burdened Families: Finding Help for People With Alzheimer's and Other Dementias (July 1990—Disk 2)

Losing a Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other Dementias (April 1987—Disk 3)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Arms control

See *Defense technology*

Automobiles and automobile industry

See *Alternative fuels; Competitiveness; Energy efficiency; Transportation*

Aviation

See *Transportation*

Banks and banking

See *Computer security; Information technology; Telecommunications*

Biological diversity

See also *Forests and forestry*

Technologies To Maintain Biological Diversity (March 1987—Disk 3)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Assessing Biological Diversity in the United States: Data Considerations (March 1986—Disk 3)

Grassroots Conservation of Biological Diversity in the United States (February 1986—Disk 3)

Biological research and technology

See also Agricultural technology; Alzheimer's disease and other dementias; Health and health technology; Law and law enforcement technology; Mental health; Research and development; Science and technology

Federal Technology Transfer and the Human Genome Project (September 1995)

Researching Health Risks (January 1993)

Cystic Fibrosis and DNA Tests: Implications of Carrier Screening (August 1992)

Genetic Counseling and Cystic Fibrosis Carrier Screening: Results of a Survey (October 1992)

Genetic Tests and Health Insurance: Results of a Survey (October 1992)

Identifying and Controlling Pulmonary Toxicants (June 1992)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Biological Rhythms: Implications for the Worker (September 1991—Disk 2)
Biotechnology in a Global Economy (October 1991—Disk 2)
Identifying and Controlling Immunotoxic Substances (April 1991—Disk 2)
Genetic Monitoring and Screening in the Workplace (October 1990—Disk 2)
Genetic Witness: Forensic Uses of DNA Tests (July 1990—Disk 2)
Neural Grafting: Repairing the Brain and Spinal Cord (October 1990—Disk 2)
Neurotoxicity: Identifying and Controlling Poisons of the Nervous System (April 1990—Disk 2)
New Developments in Biotechnology: Patenting Life—Special Report (April 1989—Disk 2)
Mapping Our Genes—Genome Projects: How Big? How Fast? (April 1988—Disk 3)
New Developments in Biotechnology: Field-Testing Engineered Organisms: Genetic and Ecological Issues (May 1988—Disk 3)
New Developments in Biotechnology: U.S. Investment in Biotechnology (July 1988—Disk 3)
New Developments in Biotechnology: Ownership of Human Tissues and Cells (March 1987—Disk 3)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cont'd...

OTA PUBLICATIONS

- New Developments in Biotechnology: Public Perceptions of Biotechnology (May 1987—Disk 3)
- Alternatives to Animal Use in Research, Testing, and Education (February 1986—Disk 3)
- Technologies for Detecting Heritable Mutations in Human Beings (September 1986—Disk 3)
- Innovative Biological Technologies for Lesser Developed Countries (July 1985—Disk 4)
- Status of Biomedical Research and Related Technology for Tropical Diseases (September 1985—Disk 4)
- Commercial Biotechnology: An International Analysis (January 1984—Disk 4)
- Human Gene Therapy (December 1984—Disk 4)
- Impacts of Neuroscience (March 1984—Disk 4)
- The Role of Genetic Testing in the Prevention of Occupational Diseases (April 1983—Disk 4)
- Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals (April 1981—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Biological weapons

See *Defense technology*

Biomaterials

See also *Materials*

Biopolymers: Making Materials Nature's Way (September 1993)

Biotechnology

See *Biological research and technology*

Business and industry

See also *Competitiveness; Computer technology; Defense technology; Economic development; Economy; Employment and training; International relations and technology transfer; Metals industry*

Innovation and Commercialization of Emerging Technologies (September 1995)

Screening and Testing Chemicals in Commerce (September 1995)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Multinationals and the U.S. Technology Base (September 1994)
Development Assistance, Export Promotion, and Environmental Technology (August 1993)
Multinationals and the National Interest: Playing by Different Rules (September 1993)
Pulling Together for Productivity: A Union-Management Initiative at US West, Inc. (September 1993)
Global Standards: Building Blocks for the Future (March 1992)
Trade and Environment: Conflicts and Opportunities (May 1992)
U.S.-Mexico Trade: Pulling Together or Pulling Apart? (September 1992)
Paying the Bill: Manufacturing and America's Trade Deficit (June 1988—Disk 3)
Trade Adjustment Assistance: New Ideas for an Old Program (June 1987—Disk 3)
Trade in Services: Exports and Foreign Revenues (September 1986—Disk 3)
Technology, Renewable Resources, and American Crafts (April 1984—Disk 4)
Exploratory Workshop on the Social Impacts of Robotics: Summary and Issues (February 1982—Disk 4)
Benefits of Increased Use of Continuous Casting by the U.S. Steel Industry (October 1979—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cancer

See also *Aging; Health and health technology; Women's health*

The Cost-Effectiveness of Colorectal Cancer Screening in Average-Risk Adults
(April 1995)

Costs and Effectiveness of Prostate Cancer Screening in Elderly Men (May 1995)

The Costs and Effectiveness of Cervical Cancer Screening in Elderly Women (February 1990—Disk 2)

Costs and Effectiveness of Colorectal Cancer Screening in the Elderly (September 1990—Disk 2)

Unconventional Cancer Treatments (September 1990—Disk 2)

Identifying and Regulating Carcinogens (November 1987—Disk 3)

Allocating Costs and Benefits in Disease Prevention Programs: An Application to
Cervical Cancer Screening (May 1981—Disk 5)

Assessment of Technologies for Determining Cancer Risks From the Environment
(June 1981—Disk 5)

Screening for Colon Cancer: A Technology Assessment (April 1981—Disk 5)

Surgery for Breast Cancer (October 1981—Disk 5)

Cancer Testing Technology and Saccharin (October 1977—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Chemical weapons

See *Defense technology; Hazardous waste*

Children's health

See also *Health and health technology; Mental health*

Adolescent Health, Vol. I: Summary and Policy Options (April 1991—Disk 2)

Adolescent Health, Vol. II: Background and the Effectiveness of Selected Prevention and Treatment Services (October 1991—Disk 2)

Adolescent Health, Vol. III: Crosscutting Issues in the Delivery of Health and Related Services (June 1991—Disk 2)

Children's Dental Services Under the Medicaid Program (October 1990—Disk 2)

Adolescent Health Insurance Status: Analyses of Trends in Coverage and Preliminary Estimates of the Effects of an Employer Mandate and Medicaid Expansion on the Uninsured (June 1989—Disk 2)

Healthy Children: Investing in the Future (February 1988—Disk 3)

Neonatal Intensive Care for Low Birthweight Infants: Costs and Effectiveness (December 1987—Disk 3)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Technology Dependent Children: Hospital Vs. Home Care (May 1987—Disk 3)
The Costs and Effectiveness of Neonatal Intensive Care (August 1981—Disk 5)

Climate change

*See also Alternative fuels; Environmental protection; Remote sensing;
Space*

Climate Treaties and Models: Issues in the International Management of Climate
Change (June 1994)

Preparing for an Uncertain Climate—Vol. I (October 1993)

Preparing for an Uncertain Climate—Vol. II (October 1993)

Changing by Degrees: Steps To Reduce Greenhouse Gases (February 1991—Disk 2)

Communications

*See also Computer technology; Information technology; Research and
development; Telecommunications*

The 1992 World Administrative Radio Conference: Technology and Policy Implica-
tions (May 1993)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- The 1992 World Administrative Radio Conference: Issues for U.S. International Spectrum Policy (November 1991—Disk 2)
- Rural America at the Crossroads: Networking for the Future (April 1991—Disk 2)
- The Big Picture: HDTV and High-Resolution Systems (June 1990—Disk 2)
- Critical Connections: Communication for the Future (February 1990—Disk 2)
- Microelectronics Research and Development (March 1986—Disk 3)
- Radiofrequency Use and Management: Impacts From the World Administrative Radio Conference of 1979 (January 1982—Disk 4)
- The Feasibility and Value of Broadband Communications in Rural Areas: A Preliminary Evaluation (April 1976—Disk 5)

Competitiveness

See also *Agricultural technology; Business and industry; Defense technology; Economic development; Economy; Environmental protection; International relations and technology transfer; Metals industry; Science and technology; Space*

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Industry, Technology, and the Environment: Competitive Challenges and Business Opportunities (January 1994)
- Competing Economies: America, Europe, and the Pacific Rim (October 1991—Disk 2)
- Helping America Compete: The Role of Federal Scientific and Technical Information (June 1990—Disk 2)
- Making Things Better: Competing in Manufacturing (February 1990—Disk 2)
- International Competition in Services: Banking, Building, Software, Know-How... (July 1987—Disk 3)
- A Review of U.S. Competitiveness in Agricultural Trade (October 1986—Disk 3)
- Wood Use: U.S. Competitiveness and Technology—Vol. II (November 1984—Disk 4)
- International Competitiveness in Electronics (November 1983—Disk 4)
- Wood Use: U.S. Competitiveness and Technology—Vol. I (August 1983—Disk 4)
- U.S. Industrial Competitiveness: A Comparison of Steel, Electronics, and Automobiles (July 1981—Disk 5)
- Technology and Steel Industry Competitiveness (June 1980—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Computer security

See also *Information technology*

Issue Update on Information Security and Privacy in Network Environments (September 1995)

Information Security and Privacy in Network Environments (September 1994)

Protecting Privacy in Computerized Medical Information (September 1993)

Defending Secrets, Sharing Data: New Locks and Keys for Electronic Information (October 1987—Disk 3)

Electronic Record Systems and Individual Privacy (June 1986—Disk 3)

Electronic Surveillance and Civil Liberties (October 1985—Disk 4)

Selected Electronic Funds Transfer Issues: Privacy, Security, and Equity (March 1982—Disk 4)

Computer technology

See also *Business and industry; Communications; Defense technology; Education; Employment and training; Information technology; Law and law enforcement technology; Science and technology; Telecommunications*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Flat Panel Displays in Perspective (September 1995)
The Social Security Administration's Decentralized Computer Strategy: Issues and Options (April 1994)
Accessibility and Integrity of Networked Information Collections (August 1993)
Advanced Network Technology (June 1993)
Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change (May 1992)
Miniaturization Technologies (November 1991—Disk 2)
Seeking Solutions: High Performance Computing for Science (March 1991—Disk 2)
Computer Software and Intellectual Property (March 1990—Disk 2)
High-Performance Computing and Networking for Science (September 1989—Disk 2)
Supercomputers: Government Plans and Policies (March 1986—Disk 3)
Automation of America's Offices, 1985-2000 (December 1985—Disk 4)
Computerized Manufacturing Automation: Employment, Education, and the Workplace (April 1984—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Crime and criminal justice

See *Law and law enforcement technology*

Defense technology

See also *Business and industry; Computer technology; Economy; Environmental protection; Hazardous waste; International relations and technology transfer*

Assessing the Potential for Civil-Military Integration: Selected Case Studies (September 1995)

Distributed Interactive Simulation of Combat (September 1995)

Environmental Monitoring for Nuclear Safeguards (September 1995)

Improving the Prospects for Future International Peace Operations: Workshop Proceedings (September 1995)

Nuclear Safeguards and the International Atomic Energy Agency (April 1995)

Other Approaches to Civil-Military Integration: The Chinese and Japanese Arms Industries (April 1995)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Assessing the Potential for Civil-Military Integration: Technologies, Processes, and Practices (September 1994)
Proliferation and the Former Soviet Union (September 1994)
Virtual Reality and Technologies for Combat Simulation (September 1994)
The Chemical Weapons Convention: Effects on the U.S. Chemical Industry (August 1993)
Contributions of DOE Weapons Labs and NIST to Semiconductor Technology (September 1993)
Defense Conversion: Redirecting R&D (May 1993)
Proliferation of Weapons of Mass Destruction: Assessing the Risks (August 1993)
Technologies Underlying Weapons of Mass Destruction (December 1993)
Who Goes There: Friend or Foe? (June 1993)
After the Cold War: Living With Lower Defense Spending (February 1992)
Building Future Security: Strategies for Restructuring the Defense Technology and Industrial Base (June 1992)
Lessons in Restructuring Defense Industry: The French Experience (June 1992)
Monitoring Limits on Sea-Launched Cruise Missiles (September 1992)
Technology Against Terrorism: Structuring Security (January 1992)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Adjusting to a New Security Environment: The Defense Technology and Industrial Base Challenge (February 1991—Disk 2)
- American Military Power: Future Needs, Future Choices (October 1991—Disk 2)
- Global Arms Trade: Commerce in Advanced Military Technology and Weapons (June 1991—Disk 2)
- Redesigning Defense: Planning the Transition to the Future U.S. Defense Industrial Base (July 1991—Disk 2)
- Technology Against Terrorism: The Federal Effort (July 1991—Disk 2)
- Verification Technologies: Cooperative Aerial Surveillance in International Agreements (July 1991—Disk 2)
- Verification Technologies: Managing Research and Development for Cooperative Arms Control Monitoring Measures (May 1991—Disk 2)
- Arming Our Allies: Cooperation and Competition in Defense Technology (May 1990—Disk 2)
- Evaluating Defense Department Research (July 1990—Disk 2)
- Holding the Edge: Maintaining the Defense Technology Base—Vol. II, Appendices (January 1990—Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Verification Technologies: Measures for Monitoring Compliance With the START Treaty (December 1990—Disk 2)
- The Containment of Underground Nuclear Explosions (October 1989—Disk 2)
- Holding the Edge: Maintaining the Defense Technology Base (April 1989—Disk 2)
- The Defense Technology Base: Introduction and Overview (March 1988—Disk 3)
- SDI: Technology, Survivability, and Software (May 1988—Disk 3)
- Seismic Verification of Nuclear Testing Treaties (May 1988—Disk 3)
- New Technology for NATO: Implementing Follow-On Forces Attack (June 1987—Disk 3)
- Technologies for NATO's Follow-On Forces Attack Concept (July 1986—Disk 3)
- Anti-Satellite Weapons, Countermeasures, and Arms Control (September 1985—Disk 4)
- Ballistic Missile Defense Technologies (September 1985—Disk 4)
- Arms Control in Space (May 1984—Disk 4)
- Directed Energy Missile Defense in Space (April 1984—Disk 4)
- MX Missile Basing (September 1981—Disk 5)
- Taggants in Explosives (April 1980—Disk 5)
- The Effects of Nuclear War (May 1979—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Nuclear Proliferation and Safeguards (June 1977—Disk 5)

Nuclear Proliferation and Safeguards: Appendix Volume II, Part One (June 1977—
Disk 5)

Nuclear Proliferation and Safeguards: Appendix Volume II, Part Two (June 1977—
Disk 5)

Developing countries

See *Agricultural technology; Energy technology; Forests and forestry; International relations and technology transfer*

Disabilities

See also *Aging; Education; Health and health technology; Mental Health; Transportation*

Psychiatric Disabilities, Employment and the Americans With Disabilities Act
(March 1994)

Access to Over-the-Road Buses for Persons With Disabilities (May 1993)

Hearing Impairment and Elderly People (May 1986—Disk 3)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Assistive Devices for Severe Speech Impairments (December 1983—Disk 4)
Selected Telecommunications Devices for Hearing-Impaired Persons (December 1982—Disk 4)
Technology and Handicapped People (May 1982—Disk 4)

Drugs

See AIDS/HIV infection; Health and health technology; Law and law enforcement technology; Pharmaceuticals; Substance abuse and addiction

Economic development

See also Business and industry; Competitiveness; Employment and training; Research and development; Science and technology

Global Communications: Opportunities for Trade and Aid (September 1995)
The Technological Reshaping of Metropolitan America (September 1995)
Technology and the American Economic Transition: Choices for the Future (May 1988—Disk 3)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

The U.S. Textile and Apparel Industry: A Revolution in Progress (April 1987—
Disk 3)

Technology, Trade, and the U.S. Residential Construction Industry (September
1986—Disk 3)

Technology and the Future of the U.S. Construction Industry (August 1984—
Disk 4)

Technology, Innovation, and Regional Economic Development (July 1984—Disk 4)

Census of State Government Initiatives for High-Technology Industrial Develop-
ment (May 1983—Disk 4)

Encouraging High-Technology Development (April 1983—Disk 4)

Economy

See also *Business and industry; Competitiveness; Defense technology; Employment and training*

Energy Use and the U.S. Economy (June 1990—Disk 2)

Statistical Needs for a Changing U.S. Economy (September 1989—Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Education

See also Computer technology; Disabilities; Employment and training; Information technology; Science and technology

Education and Technology: Future Visions (September 1995)

Learning To Work: Making the Transition From School to Work (September 1995)

Risks to Students in School (September 1995)

Teachers and Technology: Making the Connection (April 1995)

Testing and Assessment in Vocational Education (March 1994)

Adult Literacy and New Technologies: Tools for a Lifetime (July 1993)

Testing in American Schools: Asking the Right Questions (February 1992)

Higher Education for Science and Engineering (March 1989—Disk 2)

Linking for Learning: A New Course for Education (November 1989—Disk 2)

Performance Standards for Secondary School Vocational Education (April 1989—
Disk 2)

Educating Scientists and Engineers: Grade School to Grad School (June 1988—
Disk 3)

Elementary and Secondary Education for Science and Engineering (December
1988—Disk 3)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Power On! New Tools for Teaching and Learning (September 1988—Disk 3)
Preparing for Science and Engineering Careers: Field Level Profiles (January 1987—Disk 3)
State Educational Testing Practices (December 1987—Disk 3)
Trends and Status of Computers in Schools: Use in Chapter 1 Programs and Use With Limited English Proficient Students (March 1987—Disk 3)
Scientific Equipment for Undergraduates: Is It Adequate? (September 1986—Disk 3)
Technology and Learning Disabilities (December 1983—Disk 4)
Informational Technology and Its Impact on American Education (November 1982—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z

Electric power

*See also **Energy efficiency**; **Energy technology***

- Studies of the Environmental Costs of Electricity (September 1994)
Physical Vulnerability of Electric Systems to Natural Disasters and Sabotage (June 1990—Disk 2)



OTA PUBLICATIONS

Biological Effects of Power Frequency Electric and Magnetic Fields (May 1989—
Disk 2)

Electric Power Wheeling and Dealing: Technological Considerations for Increasing
Competition (May 1989—Disk 2)

New Electric Power Technologies: Problems and Prospects for the 1990s (July
1985—Disk 4)

Employment and training

*See also Business and industry; Computer technology; Economic
development; Economy; Education*

Does Vocational Education Help the “Forgotten Half”? Short-term Economic
Consequences of High School Vocational Education for Non-College Students
(September 1995)

Occupational Training for Young People in the United Kingdom (September 1995)

Performance Standards for the Food Stamp Employment and Training Program
(February 1992)

The Use of Integrity Tests for Pre-Employment Screening (September 1990—
Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Worker Training: Competing in the New International Economy (September 1990—Disk 2)

Plant Closing: Advance Notice and Rapid Response (September 1986—Disk 3)

Technology and Structural Unemployment: Reemploying Displaced Adults (February 1986—Disk 3)

Demographic Trends and the Scientific and Engineering Workforce (December 1985—Disk 4)

Displaced Homemakers: Programs and Policy (October 1985—Disk 4)

Automation and the Workplace: Selected Labor, Education, and Training Issues (March 1983—Disk 4)

Energy efficiency

See also *Alternative fuels; Electric power; International relations and technology transfer; Oil, gas, and mineral resources; Transportation*

Energy Efficiency in Federal Facilities: Update on Funding and Potential Savings (May 1994)

Saving Energy in U.S. Transportation (July 1994)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Energy Efficiency: Challenges and Opportunities for Electric Utilities (September 1993)

Energy Efficiency Technologies for Central and Eastern Europe (May 1993)

Industrial Energy Efficiency (August 1993)

Building Energy Efficiency (May 1992)

Retiring Old Cars: Programs To Save Gasoline and Reduce Emissions (July 1992)

Energy Efficiency in the Federal Government: Government by Good Example?
(May 1991—Disk 2)

Improving Automobile Fuel Economy: New Standards, New Approaches (October 1991—Disk 2)

Energy Efficiency of Buildings in Cities (March 1982—Disk 4)

Residential Energy Conservation (July 1979—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Energy technology

*See also **Alternative fuels; Electric power; International relations and technology transfer; Nuclear energy; Oceans and oceanography; Oil, gas, and mineral resources***

Renewing Our Energy Future (September 1995)

Cont'd...

OTA PUBLICATIONS

- Fueling Reform: Energy Technologies for the Former East Bloc (July 1994)
- Power Sources for Remote Arctic Applications (June 1994)
- Fueling Development: Energy Technologies for Developing Countries (April 1992)
- Energy in Developing Countries (January 1991—Disk 2)
- Energy Technology Choices: Shaping Our Future (July 1991—Disk 2)
- Industrial and Commercial Cogeneration (February 1983—Disk 4)
- Industrial Energy Use (June 1983—Disk 4)
- Energy From Biological Processes (July 1980—Disk 5)
- Energy from Biological Processes: Volume II—Technical and Environmental Analyses (September 1980—Disk 5)
- An Analysis of the ERDA Plan and Program (October 1978—Disk 5)
- Analysis of the Proposed National Energy Plan (August 1977—Disk 5)
- Comparative Analysis of the 1976 ERDA Plan and Program (May 1976—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Environmental health

*See also **Health and health technology***

- Gauging Control Technology and Regulatory Impacts in Occupational Safety and Health: An Appraisal of OSHA's Analytic Approach (September 1995)

Cont'd...

OTA PUBLICATIONS

The Department of Defense Kuwait Oil Health Fire Risk Assessment (The “Persian Gulf Veterans’ Registry”) (September 1994)

The Department of Veterans Affairs Persian Gulf Veterans’ Health Registry (September 1993)

Passive Smoking in the Workplace: Selected Issues (May 1986—Disk 3)

Preventing Illness and Injury in the Workplace (April 1985—Disk 4)

Reproductive Health Hazards in the Workplace (December 1985—Disk 4)

Reproductive Health Hazards in the Workplace: Selected Aspects of Reproductive Health Hazards Regulations (October 1985—Disk 4)

Environmental protection

See also Agricultural technology; Alternative fuels; Climate change; Competitiveness; Forests and forestry; Hazardous waste; Oceans and oceanography; Waste management

Environmental Policy Tools: A User’s Guide (September 1995)

Environmental Technology: Analysis of Selected Federal R&D Programs (July 1995)

EPA Superfund Actions and ATSDR Public Health Data (July 1995)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- An Alaskan Challenge: Native Village Sanitation (May 1994)
Water for Walker Lake (September 1993)
Alaskan Water for California?: The Subsea Pipeline Option (January 1992)
Green Products by Design: Choices for a Cleaner Environment (September 1992)
Science and Technology Issues in Coastal Ecotourism (October 1992)
Dioxin Treatment Technologies (November 1991—Disk 2)
Beneath the Bottom Line: Agricultural Approaches To Reduce Agrichemical Contamination of Groundwater (November 1990—Disk 2)
Catching Our Breath: Next Steps for Reducing Urban Ozone (July 1989—Disk 2)
Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp (May 1989—Disk 2)
Urban Ozone and the Clean Air Act: Problems and Proposals for Change (April 1988—Disk 3)
Technologies for the Preservation of Prehistoric and Historic Landscapes (July 1987—Disk 3)
Technologies for Prehistoric and Historic Preservation (September 1986—Disk 3)
Acid Rain and Transported Air Pollutants: Implications for Public Policy (May 1984—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cont'd...

OTA PUBLICATIONS

- Environmental Protection in the Federal Coal Leasing Program (May 1984—Disk 4)
Protecting the Nation's Groundwater from Contamination—Vol. I (October 1984—
Disk 4)
Protecting the Nation's Groundwater from Contamination—Vol. II (October 1984—
Disk 4)
Wetlands: Their Use and Regulation (March 1984—Disk 4)
Use of Models for Water Resources Management, Planning, and Policy (August
1982—Disk 4)
A Review of the U.S. Environmental Protection Agency: Environmental Research
Outlook FY 1976 Through 1980 (August 1976—Disk 5)

Fishing industry

See also *Oceans and oceanography*

- Current Status of Federal Involvement in U.S. Aquaculture (September 1995)
Fish Passage Technologies: Protection at Hydropower Facilities (September 1995)
Selected Technology Issues in U.S. Aquaculture (September 1995)
Competition in Coastal Seas: An Evaluation of Foreign Maritime Activities in the
200-Mile EEZ (July 1989—Disk 2)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cont'd...

Establishing a 200-Mile Fisheries Zone (June 1977—Disk 5)

Foods and nutrition

*See also **Agricultural technology***

Enhancing the Quality of U.S. Grain for International Trade (February 1989—Disk 2)

Grain Quality in International Trade: A Comparison of Major U.S. Competitors (February 1989—Disk 2)

Pesticide Residues in Food: Technologies for Detection (October 1988—Disk 3)

Environmental Contaminants in Food (December 1979—Disk 5)

Open Shelf-Life Dating of Food (August 1979—Disk 5)

Emerging Food Marketing Technologies: A Preliminary Analysis (October 1978—Disk 5)

Nutrition Research Alternatives (September 1978—Disk 5)

Perspectives on Federal Retail Food Grading (June 1977—Disk 5)

Food Information Systems (February 1976—Disk 5)

Food Information Systems: Summary and Analysis (August 1976—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Forests and forestry

See also *Biological diversity; Environmental protection*

Combined Summaries: Technologies To Sustain Tropical Forest Resources and Biological Diversity (May 1992)

Forest Service Planning: Accommodating Uses, Producing Outputs, and Sustaining Ecosystems (February 1992)

Forest Service Planning: Setting Strategic Direction Under RPA (July 1990—Disk 2)

Technologies To Sustain Tropical Forest Resources and Biological Diversity (March 1984—Disk 4)

Sustaining Tropical Forest Resources: Reforestation of Degraded Lands (May 1983—Disk 4)

Sustaining Tropical Forest Resources: U.S. and International Institutions (May 1983—Disk 4)

Fuel

See *Alternative fuels; Energy efficiency; Energy technology; Oil, gas, and*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



mineral resources

Genetic research

See *Biological research and technology*

Hazardous waste

See also *Environmental protection; Nuclear energy; Superfund; Transportation; Waste management*

Cleaning Up Contaminated Wood-Treating Sites (September 1995)

Nuclear Wastes in the Arctic: An Analysis of Arctic and Other Regional Impacts
From Soviet Nuclear Contamination (September 1995)

Dismantling the Bomb and Managing the Nuclear Materials (September 1993)

Hazards Ahead: Managing Cleanup Worker Health and Safety at the Nuclear Weapons Complex (February 1993)

Disposal of Chemical Weapons: Alternative Technologies (June 1992)

Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production
(February 1991—Disk 2)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Long-Lived Legacy: Managing High-Level and Transuranic Waste at the DOE Nuclear Weapons Complex (May 1991—Disk 2)
- Finding the Rx for Managing Medical Wastes (October 1990—Disk 2)
- Partnerships Under Pressure: Managing Commercial Low-Level Radioactive Waste (November 1989—Disk 2)
- An Evaluation of Options for Managing Greater-Than-Class-C Low-Level Radioactive Waste (October 1988—Disk 3)
- Issues in Medical Waste Management (October 1988—Disk 3)
- From Pollution to Prevention: A Progress Report on Waste Reduction (June 1987—Disk 3)
- Ocean Incineration: Its Role in Managing Hazardous Waste (August 1986—Disk 3)
- Serious Reduction of Hazardous Waste: for Pollution Prevention and Industrial Efficiency (September 1986—Disk 3)
- Managing the Nation's Commercial High-Level Radioactive Waste (March 1985—Disk 4)
- Habitability of the Love Canal Area: An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area (June 1983—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Technologies and Management Strategies for Hazardous Waste Control (March 1983—Disk 4)

Nonnuclear Industrial Hazardous Waste: Classifying for Hazard Management (November 1981—Disk 5)

Health and health technology

See also Aging; AIDS/HIV infection; Biological research and technology; Cancer; Children's health; Disabilities; Environmental health; Information technology; Medical malpractice; Mental health; Pharmaceuticals; Women's health

Coverage of Laser Technology by Health Insurers (September 1995)

Health Care Technology and Its Assessment in Eight Countries (February 1995)

Hospital Financing in Seven Countries (June 1995)

Impact of Health Reform on Rural Areas: Lessons From the States (September 1995)

Identifying Health Technologies That Work: Searching for Evidence (September 1994)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- International Comparisons of Administrative Costs in Health Care (September 1994)
- International Health Statistics: What the Numbers Mean for the United States (September 1994)
- Managed Care and Competitive Health Care Markets: The Twin Cities Experience (July 1994)
- Review of the Medical Follow-Up Agency (September 1994)
- Tools for Evaluating Health Technologies: Five Background Papers (September 1994)
- Understanding Estimates of National Health Expenditures Under Health Reform (May 1994)
- Understanding Estimates of the Impact of Health Reform on the Federal Budget (July 1994)
- Universal Health Insurance and Uninsured People: Effects on Use and Cost (September 1994)
- Benefit Design in Health Care Reform: Clinical Preventive Services (September 1993)
- Benefit Design in Health Care Reform: Patient Cost-Sharing (September 1993)
- Compilation of Abbreviations and Terms (September 1993)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Cont'd...

OTA PUBLICATIONS

- The Continuing Challenge of Tuberculosis (September 1993)
Coverage of Preventive Services: Provisions of Selected Current Health Care Reform Proposals (September 1993)
Health Insurance: The Hawaii Experience (June 1993)
An Inconsistent Picture: A Compilation of Analyses of Economic Impacts of Competing Approaches to Health Care Reform by Experts and Stakeholders (June 1993)
Does Health Insurance Make a Difference? (September 1992)
Evaluation of the Oregon Medicaid Proposal (May 1992)
Home Drug Infusion Therapy Under Medicare (May 1992)
Medical Monitoring and Screening in the Workplace: Results of a Survey (September 1991—Disk 2)
Outpatient Immunosuppressive Drugs Under Medicare (July 1991—Disk 2)
Health Care in Rural America (September 1990—Disk 2)
Preventive Health Services for Medicare Beneficiaries: Policy and Research Issues (February 1990—Disk 2)
Recombinant Erythropoietin: Payment Options for Medicare (May 1990—Disk 2)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Defining “Rural” Areas: Impact on Health Care Policy and Research (July 1989—Disk 2)
- Rural Emergency Medical Services (November 1989—Disk 2)
- Medical Testing and Health Insurance (August 1988—Disk 3)
- The Quality of Medical Care: Information for Consumers (June 1988—Disk 3)
- Effects of Federal Policies on Extracorporeal Shock Wave Lithotripsy (May 1986—Disk 3)
- Indian Health Care (April 1986—Disk 3)
- Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives: A Policy Analysis (December 1986—Disk 3)
- Payment for Physician Services: Strategies for Medicare (February 1986—Disk 3)
- Blood Policy and Technology (January 1985—Disk 4)
- The Cost Effectiveness of Digital Subtraction Angiography in the Diagnosis of Cerebrovascular Disease (May 1985—Disk 4)
- The Effectiveness and Costs of Continuous Ambulatory Peritoneal Dialysis (CAPD) (September 1985—Disk 4)
- Medical Devices and the Veterans Administration (February 1985—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Medicare's Prospective Payment System: Strategies for Evaluating Cost, Quality, and Medical Technology (October 1985—Disk 4)
- Technologies for Managing Urinary Incontinence (July 1985—Disk 4)
- The Boston Elbow (November 1984—Disk 4)
- The Contact Lens Industry: Structure, Competition, and Public Policy (December 1984—Disk 4)
- Federal Policies and the Medical Devices Industry (November 1984—Disk 4)
- The Hemodialysis Equipment and Disposables Industry (December 1984—Disk 4)
- Intensive Care Units (ICUs): Clinical Outcomes, Costs, and Decisionmaking (November 1984—Disk 4)
- The Market for Wheelchairs: Innovations and Federal Policy (November 1984—Disk 4)
- Medical Technology and the Costs of the Medicare Program (July 1984—Disk 4)
- Nuclear Magnetic Resonance Imaging Technology: A Clinical, Industrial, and Policy Analysis (September 1984—Disk 4)
- Update of Federal Activities Regarding the Use of Pneumococcal Vaccine (May 1984—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology (July 1983—Disk 4)
- The Impact of Randomized Clinical Trials on Health Policy and Medical Practice (August 1983—Disk 4)
- The Safety, Efficacy, and Cost Effectiveness of Therapeutic Apheresis (July 1983—Disk 4)
- Variations in Hospital Length of Stay: Their Relationship to Health Outcomes (August 1983—Disk 4)
- The Artificial Heart: Costs, Risks, and Benefits (May 1982—Disk 4)
- Cardiac Radionuclide Imaging and Cost Effectiveness (May 1982—Disk 4)
- Four Common X-Ray Procedures: Problems and Prospects for Economic Evaluation (April 1982—Disk 4)
- Medical Technology Under Proposals To Increase Competition in Health Care (October 1982—Disk 4)
- MEDLARS and Health Information Policy (September 1982—Disk 4)
- Strategies for Medical Technology Assessment (September 1982—Disk 4)
- Technology Transfer at the National Institutes of Health (March 1982—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cont'd...

OTA PUBLICATIONS

- World Population and Fertility Planning Technologies: The Next 20 Years (February 1982—Disk 4)
- Assessing Selected Respiratory Therapy Modalities: Trends and Relative Costs in the Washington, D.C., Area (July 1981—Disk 5)
- Benefit-And-Cost Analysis of Medical Interventions: The Case of Cimetidine and Peptic Ulcer Disease (September 1981—Disk 5)
- Cost Benefit/Cost Effectiveness of Medical Technologies: A Case Study of Orthopedic Joint Implants (September 1981—Disk 5)
- Cost Effectiveness of Automated Multichannel Chemistry Analyzers (May 1981—Disk 5)
- The Cost Effectiveness of Bone Marrow Transplant Therapy and Its Policy Implications (May 1981—Disk 5)
- Cost Effectiveness of Influenza Vaccination (December 1981—Disk 5)
- The Cost Effectiveness of Upper Gastrointestinal Endoscopy (May 1981—Disk 5)
- The Costs and Effectiveness of Nurse Practitioners (July 1981—Disk 5)
- The Feasibility of Economic Evaluation of Diagnostic Procedures: The Case of CT Scanning (April 1981—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

- Formal Analysis, Policy Formulation, and End-Stage Renal Disease (April 1981—Disk 5)
- Periodontal Disease: Assessing the Effectiveness and Costs of the Keyes Technique (May 1981—Disk 5)
- Policy Implications of the Computed Tomography (CT) Scanner: An Update (January 1981—Disk 5)
- Compensation for Vaccine-Related Injuries (November 1980—Disk 5)
- Forecasts of Physician Supply and Requirements (April 1980—Disk 5)
- The Implications of Cost-Effectiveness Analysis of Medical Technology (August 1980—Disk 5)
- The Implications of Cost-Effectiveness Analysis of Medical Technology: Methodological Issues and Literature Review (September 1980—Disk 5)
- The Management of Health Care Technology in Ten Countries (October 1980—Disk 5)
- Computer Technology in Medical Education and Assessment (September 1979—Disk 5)
- A Review of Selected Federal Vaccine and Immunization Policies, Based on Case Studies of Pneumococcal Vaccine (September 1979—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Selected Topics in Federal Health Statistics (June 1979—Disk 5)
Assessing the Efficacy and Safety of Medical Technologies (September 1978—
Disk 5)
Policy Implications of the Computed Tomography (CT) Scanner (November 1978—
Disk 5)
Policy Implications of Medical Information Systems (December 1977—Disk 5)
Development of Medical Technology: Opportunities for Assessment (August 1976—
Disk 5)

Information technology

See also Communications; Computer security; Computer technology; Education; Health and health technology; Law and law enforcement technology; Research and development; Science and technology; Telecommunications

- Bringing Health Care Online: The Role of Information Technologies (September 1995)
Information Technologies for the Control of Money Laundering (September 1995)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Electronic Enterprises: Looking to the Future (May 1994)

Wage Record Information Systems (May 1994)

Making Government Work: Electronic Delivery of Federal Services (September 1993)

Electronic Bulls and Bears: U.S. Securities Markets and Information Technology (September 1990—Disk 2)

Trading Around the Clock: Global Securities Markets and Information Technology (July 1990—Disk 2)

Federal Scientific and Technical Information in an Electronic Age: Opportunities and Challenges (October 1989—Disk 2)

Electronic Delivery of Public Assistance Benefits: Technology Options and Policy Issues (April 1988—Disk 3)

Informing the Nation: Federal Information Dissemination in an Electronic Age (October 1988—Disk 3)

The Electronic Supervisor: New Technology, New Tensions (September 1987—Disk 3)

Hospital Information Systems at the Veterans Administration (September 1987—Disk 3)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Federal Government Information Technology: Management, Security, and Congressional Oversight (February 1986—Disk 3)

The Social Security Administration and Information Technology (October 1986—Disk 3)

Information Technology R&D: Critical Trends and Issues (February 1985—Disk 4)

Effects of Information Technology on Financial Services Systems (September 1984—Disk 4)

Review of Postal Automation Strategy: A Technical and Decision Analysis (June 1984—Disk 4)

Implications of Electronic Mail and Message Systems for the U.S. Postal Service (August 1982—Disk 4)

Computer-Based National Information Systems: Technology and Public Policy Issues (September 1981—Disk 5)

A Preliminary Analysis of the IRS Tax Administration System (March 1977—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Insect and pest management technology

See also [Agricultural technology](#)

Cont'd...

OTA PUBLICATIONS

Biologically Based Technologies for Pest Control (September 1995)
Harmful Non-Indigenous Species in the United States (September 1993)
Plague of Locusts—Special Report (June 1990—Disk 2)
Pest Management Strategies in Crop Protection (October 1979—Disk 5)

International relations and technology transfer

*See also **Agricultural technology; Business and industry; Competitiveness; Energy efficiency; Energy technology; Space***

Export Controls and Nonproliferation Policy (May 1994)
New Opportunities for U.S. Universities in Development Assistance: Agriculture, Natural Resources, and Environment (September 1991—Disk 2)
Technology Transfer to the United States: The MIT-Japan Science and Technology Program (April 1989—Disk 2)
Grassroots Development: The African Development Foundation (June 1988—Disk 3)
Aid to Developing Countries: The Technology/Ecology Fit (June 1987—Disk 3)
Technology Transfer to China (July 1987—Disk 3)
Energy Technology Transfer to China (September 1985—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Africa Tomorrow: Issues in Technology, Agriculture, and U.S. Foreign Aid (December 1984—Disk 4)

Technology Transfer to the Middle East (September 1984—Disk 4)

Technology and East-West Trade: An Update (May 1983—Disk 4)

Technology and Soviet Energy Availability (November 1981—Disk 5)

Technology and East-West Trade (November 1979—Disk 5)

Labor

See *Business and industry; Employment and training*

Law and law enforcement technology

See also *Biological research and technology; Computer technology; Information technology; Medical malpractice; Science and technology*

Electronic Surveillance in a Digital Age (July 1995)

Alternative Coca Reduction Strategies in the Andean Region (July 1993)

Police Body Armor Standards and Testing, Vol. I (August 1992)

Police Body Armor Standards and Testing, Vol. II—Appendixes (August 1992)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Automated Record Checks for Firearm Purchasers: Issues and Options (July 1991—Disk 2)
- The FBI Fingerprint Identification Automation Program: Issues and Options (November 1991—Disk 2)
- Copyright and Home Copying: Technology Challenges the Law (October 1989—Disk 2)
- Criminal Justice, New Technologies, and the Constitution (May 1988—Disk 3)
- The Border War on Drugs (March 1987—Disk 3)
- Intellectual Property Rights in an Age of Electronics and Information (April 1986—Disk 3)
- Scientific Validity of Polygraph Testing: A Research Review and Evaluation (November 1983—Disk 4)
- An Assessment of Alternatives for a National Computerized Criminal History System (October 1982—Disk 4)
- A Preliminary Assessment of the National Crime Information Center and the Computerized Criminal History System (December 1978—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Manufacturing

See *Business and industry; Competitiveness*

Materials

See also *Biomaterials; Superconductors*

Advanced Materials by Design (June 1988—Disk 3)

New Structural Materials Technologies: Opportunities for the Use of Advanced
Ceramics and Composites (September 1986—Disk 3)

Strategic Materials: Technologies To Reduce U.S. Import Vulnerability (May
1985—Disk 4)

Engineering Implications of Chronic Materials Scarcity (April 1977—Disk 5)

An Assessment of Alternative Economic Stockpiling Policies (August 1976—
Disk 5)

An Assessment of Information Systems Capabilities Required To Support U.S.
Materials Policy Decisions (December 1976—Disk 5)

Requirements for Fulfilling a National Materials Policy (August 1974—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Medicaid and Medicare

See *Health and health technology; Medical malpractice (below)*

Medical malpractice

See also *Health and health technology; Law and law enforcement technology*

Defensive Medicine and Medical Malpractice (July 1994)

Impact of Legal Reforms on Medical Malpractice Costs (September 1993)

Do Medicaid and Medicare Patients Sue More Often Than Other Patients? (September 1992)

Mental health

See also *Alzheimer's disease and other dementias; Biological research and technology; Children's health; Disabilities; Health and health technology*

Mental Disorders and Genetics: Bridging the Gap Between Research and Society (September 1994)

The Biology of Mental Disorders (September 1992)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Indian Adolescent Mental Health (January 1990—Disk 2)

Children's Mental Health: Problems and Services (December 1986—Disk 3)

The Efficacy and Cost Effectiveness of Psychotherapy (October 1980—Disk 5)

Metals industry

See also *Business and industry; Competitiveness*

Nonferrous Metals: Industry Structure (September 1990—Disk 2)

Copper: Technology and Competitiveness (September 1988—Disk 3)

Technical Options for Conservation of Metals: Case Studies of Selected Metals and Products (September 1979—Disk 5)

Natural disasters

Reducing Earthquake Losses (September 1995)

Criteria for Evaluating the Implementation Plan Required By the Earthquake Hazards Reduction Act of 1977 (January 1980—Disk 5)

Issues and Options in Flood Hazards Management (February 1980—Disk 5)

U.S. Disaster Assistance to Developing Countries: Lessons Applicable to U.S.

Domestic Disaster Programs (January 1980—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Nuclear energy

See also Energy technology; Hazardous waste

The Fusion Energy Program: The Role of TPX and Alternate Concepts (February 1995)

Technical Options for the Advanced Liquid Metal Reactor (May 1994)

Aging Nuclear Power Plants: Managing Plant Life and Decommissioning (September 1993)

Starpower: The U.S. and the International Quest for Fusion Energy (October 1987—Disk 3)

Nuclear Power in an Age of Uncertainty (February 1984—Disk 4)

Nuclear Powerplant Standardization: Light Water Reactors (April 1981—Disk 5)

Nuclear war and nuclear weapons

See Defense technology; Hazardous waste

Oceans and oceanography

See also Alternative fuels; Energy technology; Environmental protection;

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

*Fishing industry; Oil, gas, and mineral resources; Oil spills;
Transportation*

Marine Minerals: Exploring Our New Ocean Frontier (July 1987—Disk 3)
Technologies for Underwater Archaeology and Maritime Preservation (September 1987—Disk 3)

Wastes in Marine Environments (April 1987—Disk 3)

Marine Applications for Fuel Cell Technology (February 1986—Disk 3)

Technology and Oceanography: An Assessment of Federal Technologies for
Oceanographic Research and Monitoring (June 1981—Disk 5)

Ocean Margin Drilling (May 1980—Disk 5)

Recent Developments in Ocean Thermal Energy (April 1980—Disk 5)

Renewable Ocean Energy Sources: Part I—Ocean Thermal Energy Conversion (May 1978—Disk 5)

Coastal Effects of Offshore Energy Systems: An Assessment of Oil and Gas Systems, Deepwater Ports, and Nuclear Powerplants Off the Coasts of New Jersey and Delaware (November 1976—Disk 5)

Analysis of the Feasibility of Separating Exploration From Production of Oil and Gas on the Outer Continental Shelf (May 1975—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Oil, gas, and mineral resources

See also *Alternative fuels; Energy efficiency; Energy technology; Oceans and oceanography*

- U.S. Oil Import Vulnerability: The Technical Replacement Capability (October 1991—Disk 2)
- Royalty Management Program's Auditing and Financial System: Technical Issues (July 1990—Disk 2)
- Oil Production in the Arctic National Wildlife Refuge: The Technology and the Alaskan Oil Context (February 1989—Disk 2)
- Polar Prospects: A Minerals Treaty for Antarctica (September 1989—Disk 2)
- U.S. Oil Production: The Effect of Low Oil Prices (July 1987—Disk 3)
- Potential Effects of Section 3 of the Federal Coal Leasing Amendments Act of 1976 (March 1986—Disk 3)
- Western Surface Mine Permitting and Reclamation (June 1986—Disk 3)
- Oil and Gas Technologies for the Arctic and Deepwater (May 1985—Disk 4)
- U.S. Natural Gas Availability: Gas Supply Through the Year 2000 (February 1985—Disk 4)
- U.S. Vulnerability to an Oil Import Curtailment (September 1984—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000
(September 1983—Disk 4)

An Assessment of Development and Production Potential of Federal Coal Leases
(December 1981—Disk 5)

Coal Exports and Port Development (April 1981—Disk 5)

Patterns and Trends in Federal Coal Lease Ownership, 1950-80 (April 1981—
Disk 5)

Alternative Energy Futures: Part I—The Future of Liquefied Natural Gas Imports
(March 1980—Disk 5)

An Assessment of Oil Shale Technologies (June 1980—Disk 5)

Assessment of Oil Shale Technologies—Vol. II: A History and Analysis of the
Federal Prototype Oil Shale Leasing Program (July 1980—Disk 5)

World Petroleum Availability 1980-2000 (November 1980—Disk 5)

Analysis of Laws Governing Access Across Federal Lands: Options for Access in
Alaska (February 1979—Disk 5)

The Direct Use of Coal (April 1979—Disk 5)

Management of Fuel and Nonfuel Minerals in Federal Land (April 1979—Disk 5)

Enhanced Oil Recovery Potential in the United States (January 1978—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

A Technology Assessment of Coal Slurry Pipelines (March 1978—Disk 5)
Status Report on the Gas Potential From Devonian Shales of the Appalachian Basin
(November 1977—Disk 5)
Analysis of the Impacts of the Projected Natural Gas Curtailments for the Winter
1975-76 (November 1975—Disk 5)

Oil spills

See also Oceans and oceanography

Bioremediation for Marine Oil Spills (May 1991—Disk 2)
Coping With an Oiled Sea (March 1990—Disk 2)
Oil Transportation by Tankers: An Analysis of Marine Pollution and Safety Mea-
sures (July 1975—Disk 5)

Osteoporosis

See also Aging; Women's health

Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement
Therapy, Vol. I: Cost-Effectiveness Analysis (August 1995)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Effectiveness and Costs of Osteoporosis Screening and Hormone Replacement Therapy, Vol. II: Evidence on Benefits, Risks, and Costs (September 1995)
Public Information About Osteoporosis: What's Available, What's Needed? (September 1994)
Hip Fracture Outcomes in People Age 50 and Over (September 1994)

OTA Annual Reports

Annual Report to the Congress: Fiscal Year 1995 (March 1996)
Annual Report to the Congress: Fiscal Year 1994 (March 1995)
Annual Report to the Congress: Fiscal Year 1993 (March 1994)
Annual Report to the Congress: Fiscal Year 1991 (March 1992)
Annual Report to the Congress: Fiscal Year 1985 (March 1986—Disk 3)
Annual Report to the Congress: Fiscal Year 1984 (March 1985—Disk 4)
Annual Report to the Congress: January 1 to September 30, 1983 (March 1984—Disk 4)
Annual Report to the Congress for 1982 (March 1983—Disk 4)
Annual Report to the Congress for 1981 (March 1982—Disk 4)
Annual Report to the Congress for 1980 (March 1981—Disk 5)
Annual Report to the Congress for 1979 (March 1980—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Annual Report to the Congress for 1978 (March 1979—Disk 5)
OTA Priorities 1979, With Brief Descriptions of Priorities and of Assessments in Progress (March 1979—Disk 5)
Annual Report to the Congress for 1977 (March 1978—Disk 5)
Annual Report to the Congress by the Office of Technology Assessment: March 15, 1977 (March 1977—Disk 5)
Annual Report to the Congress by the Office of Technology Assessment: March 15, 1976 (March 1976—Disk 5)
Annual Report to the Congress by the Office of Technology Assessment: March 15, 1975 (March 1975—Disk 5)
Annual Report to the Congress by the Office of Technology Assessment: March 15, 1974 (March 1974—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z

Patents

See *Biological research and technology; Business and industry; Pharmaceuticals*



Pharmaceuticals

See also *Health and health technology*

Impacts of Antibiotic-Resistant Bacteria (September 1995)

Drug Labeling in Developing Countries (February 1993)

Pharmaceutical R&D: Costs, Risks, and Rewards (February 1993)

Federal and Private Roles in the Development and Provision of Alglucerase Therapy for Gaucher Disease (October 1992)

The Information Content of Premanufacture Notices (April 1983—Disk 4)

Postmarketing Surveillance of Prescription Drugs (November 1982—Disk 4)

Patent-Term Extension and the Pharmaceutical Industry (August 1981—Disk 5)

Drug Bioequivalence (July 1974—Disk 5)

Pollution

See *Environmental protection; Hazardous waste; Oceans and oceanography; Superfund; Waste management*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Remote sensing

See also *Climate change; Space*

Reducing the Costs of Collecting Meteorological Data: A Workshop Summary (June 1995)

Civilian Satellite Remote Sensing: A Strategic Approach (September 1994)

Remotely Sensed Data: Technology, Management and Markets (September 1994)

Data Format Standards for Civilian Remote Sensing Satellites (May 1993)

The Future of Remote Sensing From Space: Civilian Satellite Systems and Applications (July 1993)

Global Change Research and NASA's Earth Observing System (November 1993)

Remotely Sensed Data From Space: Distribution, Pricing, and Applications (July 1992)

Remote Sensing and the Private Sector: Issues for Discussion (March 1984—Disk 4)

Research and development

See also *Agricultural technology; AIDS/HIV infection; Biological research and technology; Communications; Economic development; Information*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

technology; Science and technology; Transportation

The Effectiveness of Research and Experimentation Tax Credits (September 1995)

Foreign Eligibility for U.S. Technology Funding (September 1995)

A History of the Department of Defense Federally Funded Research and Development Centers (June 1995)

Information Systems Related to Technology Transfer: A Report on Federal Technology Transfer in the United States (September 1993)

Federally Funded Research: Decisions for a Decade (May 1991—Disk 2)

Proposal Pressure in the 1980s: An Indicator of Stress on the Federal Research System (April 1990—Disk 2)

Construction and Material Ambulancias Mercys Research and Development for the National Works (June 1987—Disk 3)

Research Funding as an Investment: Can We Measure the Returns? (April 1986—Disk 3)

Quality and Relevance of Research and Related Activities at the Gorges Memorial Laboratory (August 1983—Disk 4)

An Assessment of Technology for Local Development (January 1981—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Applications of R&D in the Civil Sector: The Opportunity Provided by the Federal Grant and Cooperative Agreement Act of 1977 (June 1978—Disk 5)

Government Involvement in the Innovation Process: A Contractor's Report to the Office of Technology Assessment (August 1978—Disk 5)

The Health of the Scientific and Technical Enterprise: An Advisory Panel Report to the Office of Technology Assessment (October 1978—Disk 5)

The Role of Demonstrations in Federal R&D Policy (July 1978—Disk 5)

Science and technology

See also Biological research and technology; Competitiveness; Computer technology; Economic development; Education; Information technology; Law and law enforcement technology; Research and development

International Partnerships in Large Science Projects (July 1995)

Perspectives on the Role of Science and Technology in Sustainable Development (September 1994)

Biomedical Ethics in U.S. Public Policy (June 1993)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Proceedings: Technology and Governance in the 1990s. Papers Presented at the OTA 20th Anniversary Forum on Technology and Governance in the 1990s (April 1993)

Biology, Medicine, and the Bill of Rights (September 1988—Disk 3)

Book Preservation Technologies (May 1988—Disk 3)

Science, Technology, and the First Amendment (January 1988—Disk 3)

Science, Technology, and the Constitution (September 1987—Disk 3)

The Regulatory Environment for Science (February 1986—Disk 3)

Global Models, World Futures, and Public Policy: A Critique (April 1982—Disk 4)

Impact of a Department of Education on Federal Science and Technology Activities (August 1978—Disk 5)

Technology Assessment in Business and Government (January 1977—Disk 5)

Technology Assessment Activities in the Industrial, Academic, and Governmental Communities (December 1976—Disk 5)

Solar power

Solar Power Satellites (August 1981—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Conservation and Solar Energy Programs of the Department of Energy: A Critique
(June 1980—Disk 5)

Application of Solar Technology to Today's Energy Needs—Vol. I (June 1978—
Disk 5)

Application of Solar Technology to Today's Energy Needs—Vol. II (September
1978—Disk 5)

Space

*See also Climate change; Competitiveness; International relations and
technology transfer; Remote sensing*

The Lower Tiers of the Space Transportation Industrial Base (August 1995)

The National Space Transportation Policy: Issues for Congress (June 1995)

U.S.-Russian Cooperation in Space (May 1995)

NASA's Office of Space Science and Applications: Process, Priorities and Goals
(January 1992)

Exploring the Moon and Mars: Choices for the Nation (July 1991—Disk 2)

Access to Space: The Future of U.S. Space Transportation Systems (April 1990—
Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Affordable Spacecraft: Design and Launch Alternatives (January 1990—Disk 2)
Orbiting Debris: A Space Environmental Problem (October 1990—Disk 2)
Big Dumb Boosters: A Low-Cost Space Transportation Option? (February 1989—
Disk 2)
Round Trip to Orbit: Human Spaceflight Alternatives (August 1989—Disk 2)
Launch Options for the Future: A Buyer's Guide (July 1988—Disk 3)
Reducing Launch Operation Costs: New Technologies and Practices (September
1988—Disk 3)
Commercial Newsgathering From Space (May 1987—Disk 3)
Space Stations and the Law: Selected Legal Issues (August 1986—Disk 3)
International Cooperation and Competition in Civilian Space Activities (June
1985—Disk 4)
U.S.-Soviet Cooperation in Space (July 1985—Disk 4)
Civilian Space Stations and the U.S. Future in Space (November 1984—Disk 4)
SALYUT: Soviet Steps Toward Permanent Human Presence in Space (December
1983—Disk 4)
UNISPACE '82: A Context for International Cooperation and Competition (March
1983—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Civilian Space Policy and Applications (June 1982—Disk 4)
Space Science Research in the United States (September 1982—Disk 4)

Substance abuse and addiction

*See also AIDS/HIV infection; Health and health technology;
Pharmaceuticals*

Technologies for Understanding and Preventing Substance Abuse and Addiction
(September 1994)
Biological Components of Substance Abuse and Addiction (September 1993)
The Effectiveness and Costs of Alcoholism Treatment (March 1983—Disk 4)

Superconductors

See also Materials

High-Temperature Superconductivity in Perspective (April 1990—Disk 2)
Commercializing High-Temperature Superconductivity (June 1988—Disk 3)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Superfund

See also *Hazardous waste; Waste management*

Assessing Contractor Use in Superfund (January 1989—Disk 2)

Coming Clean: Superfund Problems Can Be Solved... (October 1989—Disk 2)

Are We Cleaning Up? 10 Superfund Case Studies (June 1988—Disk 3)

Superfund Strategy (April 1985—Disk 4)

Telecommunications

See also *Communications; Computer technology; Information technology*

Telecommunications Technology and Native Americans: Opportunities and Challenges (August 1995)

Wireless Technologies and the National Information Infrastructure (September 1995)

U.S. Telecommunications Services in European Markets (August 1993)

U.S. Banks and International Telecommunications (October 1992)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Terrorism

See *Defense technology*

Training

See *Education; Employment and training*

Transportation

See also *Alternative fuels; Disabilities; Energy efficiency; Hazardous waste; Oceans and oceanography; Research and development*

Advanced Automotive Technology: Visions of a Super-Efficient Family Car (September 1995)

Federal Research and Technology for Aviation (September 1994)

Aircraft Evacuation Testing: Research and Technology Issues (September 1993)

Delivering the Goods: Public Works Technologies, Management, and Financing (April 1991—Disk 2)

Moving Ahead: 1991 Surface Transportation Legislation (June 1991—Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- New Ways: Tiltrotor Aircraft and Magnetically Levitated Vehicles (September 1991—Disk 2)
- Rebuilding the Foundations: A Special Report on State and Local Public Works Financing and Management (March 1990—Disk 2)
- Advanced Vehicle/Highway Systems and Urban Traffic Problems (September 1989—Disk 2)
- Safer Skies with TCAS: Traffic Alert and Collision Avoidance System—A Special Report (February 1989—Disk 2)
- Gearing Up for Safety: Motor Carrier Safety in a Competitive Environment (September 1988—Disk 3)
- Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment (July 1988—Disk 3)
- Transportation of Hazardous Materials (July 1986—Disk 3)
- Transportation of Hazardous Materials: State and Local Activities (March 1986—Disk 3)
- Alternative Approaches to Cargo Policy: A Supplement to an Assessment of Maritime Trade and Technology (August 1985—Disk 4)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



Cont'd...

OTA PUBLICATIONS

R&D in the Maritime Industry: A Supplement to an Assessment of Maritime Trade and Technology (May 1985—Disk 4)

Airport System Development (August 1984—Disk 4)

An Assessment of Maritime Trade and Technology (October 1983—Disk 4)

U.S. Passenger Rail Technologies (December 1983—Disk 4)

The Air Cargo System (January 1982—Disk 4)

Air Service to Small Communities (February 1982—Disk 4)

Airport and Air Traffic Control System (January 1982—Disk 4)

Financing and Program Alternatives for Advanced High-Speed Aircraft (August 1982—Disk 4)

Mandatory Passive Restraint Systems in Automobiles: Issues and Evidence (September 1982—Disk 4)

Review of the FAA 1982 National Airspace System Plan (August 1982—Disk 4)

Advanced High-Speed Aircraft (April 1980—Disk 5)

Impact of Advanced Group Rapid Transit Technology (January 1980—Disk 5)

Proceedings of the OTA Seminar on the Discrete Address Beacon System (DABS) (July 1980—Disk 5)

Railroad Safety—U.S.-Canadian Comparison (August 1979—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume I: Summary and Findings (February 1979—Disk 5)

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume II: Technical Report (February 1979—Disk 5)

Technology Assessment of Changes in the Future Use and Characteristics of the Automobile Transportation System—Volume III: Public Participation (October 1979—Disk 5)

An Evaluation of Railroad Safety (May 1978—Disk 5)

Transportation of Liquefied Natural Gas (September 1977—Disk 5)

Assessment of Community Planning for Mass Transit: Volume 10—Washington, D.C. Case Study (February 1976—Disk 5)

Assessment of Community Planning for Mass Transit: Volume 11—Technical Report (February 1976—Disk 5)

Assessment of Community Planning for Mass Transit: Volume 12—Bibliography (February 1976—Disk 5)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



OTA PUBLICATIONS

- Assessment of Community Planning for Mass Transit: Volume 2—Atlanta Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 3—Boston Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 4—Chicago Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 5—Denver Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 6—Los Angeles Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 7—Minneapolis-St. Paul Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 8—San Francisco Case Study (February 1976—Disk 5)
- Assessment of Community Planning for Mass Transit: Volume 9—Seattle Case Study (February 1976—Disk 5)
- Automatic Train Control in Rail Rapid Transit (May 1976—Disk 5)

Jump to letter:

A B C D E F
G-H I-K L M
N O P-Q R S
T-V W-Z



OTA PUBLICATIONS

Automated Guideway Transit: An Assessment of PRT and Other New Systems (June 1975—Disk 5)

Automobile Collision Data: An Assessment of Needs and Methods of Acquisition (February 1975—Disk 5)

Energy, the Economy, and Mass Transit (October 1975—Disk 5)

Financial Viability of Conrail: Review and Analysis (September 1975—Disk 5)

A Review of Alternative Approaches to Federal Funding of Rail Rehabilitation (September 1975—Disk 5)

A Review of National Railroad Issues (December 1975—Disk 5)

Waste management

See also *Environmental protection; Hazardous waste; Superfund*

State of the States on Brownfields: Programs for Cleanup and Reuse of Contaminated Sites (June 1995)

Managing Industrial Solid Wastes From Manufacturing, Mining, Oil and Gas Production, and Utility Coal Combustion (March 1992)

Facing America's Trash: What Next for Municipal Solid Waste? (October 1989—Disk 2)

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



Materials and Energy From Municipal Waste (July 1979—Disk 5)

Women's health

See also *Cancer; Health and health technology; Osteoporosis*

The Menopause, Hormone Therapy, and Women's Health (May 1992)

Review of a Protocol for a Study of Reproductive Health Outcomes Among Women
Vietnam Veterans (December 1991—Disk 2)

Screening Mammography in Primary Care Settings: Implications for Cost Access
and Quality (October 1991—Disk 2)

Artificial Insemination: Practice in the United States: Summary of a 1987 Survey
(August 1988—Disk 3)

Infertility: Medical and Social Choices (May 1988—Disk 3)

Elective Hysterectomy: Costs, Risks, and Benefits (October 1981—Disk 5)

Workplace safety and health

See *Environmental health*

Jump to letter:

A B C D E F

G-H I-K L M

N O P-Q R S

T-V W-Z



ABOUT THIS DISK...

Help

How to use the search and navigation tools on these disks to find information in OTA reports

Obtaining OTA reports

How to purchase paper and electronic copies of OTA reports and access the OTA Legacy Websites

Production notes & credits

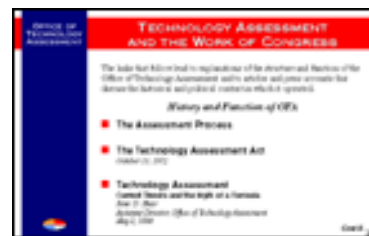
Preserving the OTA heritage



ABOUT THIS DISK...

Suggestions and Help

The main menu and the initial pages of the historical, publications, and help sections of the CD-ROM can be reached through the color-coded sections of the navigation ellipse found on every page.



ABOUT THIS DISK...

Opening Reports

Open individual reports in separate windows by clicking on their titles in the lists on the blue publication pages. Titles displayed in gray rather than black are found on other disks in *The OTA Legacy* series. Terms in red are hyperlinks to other portions of this navigation document.

Switching between Documents

Up to ten documents can be open simultaneously. To return to this navigational document, click one of the quadrants of the navigation ellipse found on the cover page of the report, or choose this document from the "Window" menu.

Education

See also [Computer technology](#);

Education and Technology: Future
Linking for Learning: A New Cou
Performance Standards for Second
Educating Scientists and Engineer

Window

Show Toolbar ⌘⇧B

OTA92_95.PDF

✓ 9507.pdf



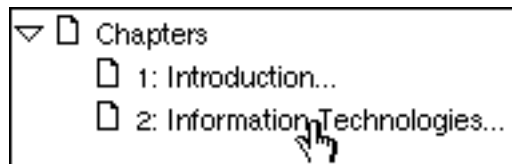
ABOUT THIS DISK...

Toolbar

The controls in the toolbar at the top of the screen are the key to navigating quickly within documents on the CD-ROM. (If the toolbar doesn't appear on your screen, reveal it by using the "Show Toolbar" command under the "Windows" menu.)

Bookmarks

Each report contains hypertext links or "bookmarks" connected to the beginning of chapters, appendices, and other major sections.



Display format

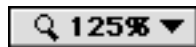
The first three toolbar buttons control the display format. Normally, only images of the pages are shown. Choose the middle button to reveal the bookmarks, or the button on the right to show thumbnail images alongside the pages.



ABOUT THIS DISK...

Move & zoom

Choose the left button (or the scroll bars) to move the page within the window and the magnifying glass buttons to zoom in for a closer look at the pages. The magnification can also be set with the pop-up menu in the lower left corner of the screen.



The fonts used within the documents were originally chosen for readability on printed pages. If they are hard to read on screen, try using a higher magnification or printing the document.

Set the page format

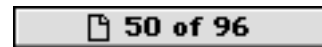
Choose the left button to display a view of the entire page, the middle button to display a full-height view of the page, and the right button to display a full-width view.



ABOUT THIS DISK...

Jump to different pages

Choose the middle buttons to move forward or back one page, and the end buttons to move to the first or last page of the document. Jump to any page in the document by clicking on the page icon displayed in the lower left corner.



Pages within the document are numbered sequentially. Most OTA reports used separate pagination systems for the front matter and the main body of the text, and in addition many blank pages have been removed from the documents. For these reasons, the Acrobat page numbers do not usually correspond to the those listed in the tables of contents within the OTA documents.

Retrace path

Choose the left button to go to the series of last pages visited, and then the right button to return along the same path to the current page.



ABOUT THIS DISK...

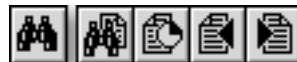
Select and copy text

Choose this button to select text for copying to another application. This tool often selects text or graphics that span more than one column; to constrain the selection to a desired area, hold down the Option key (Macintosh) or Control key (Windows).



Search for text

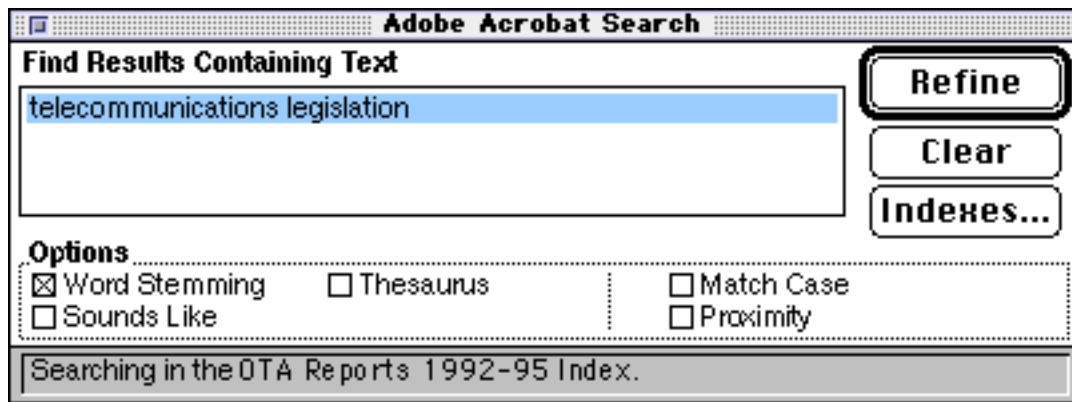
Choose the leftmost button to search for a word in the current document, and the second button to search for text in an index of all the OTA documents on the CD-ROM. The third button displays the results of a multi-document search, ranked in order of relevance. The remaining buttons jump to the next (or previous) occurrences of the term found by the search tool.



ABOUT THIS DISK...

Full-Text Searches

The *search* button evokes a dialog box like the one below. When *word-stemming* option is enabled, a search will find all words with common stems. For instance, a search for "govern" will also find "government" and "governor". The *sounds-like* option finds words that are phonetically similar, such as "salmon" and "Solomon". The *match-case* option is not supported by the indices of OTA documents.



ABOUT THIS DISK...

Search Indexes

The search command uses index files to track the location of information in the reports on each CD-ROM. This navigation document and all the OTA reports have been linked to the appropriate index, so for most users the proper index file will be available transparently whenever any OTA

Acrobat document is open. Users with multiple CD-ROM drives may wish to search the full set of OTA documents simultaneously. To do so, manually link to the index files on the other disks in the OTA Legacy with the "Indexes" command. Additional information about using multiple CD-ROM drives can be found in the installation instructions.

Further help

The menu commands for the Acrobat™ Reader and details about how to use the search function with wildcards, Boolean searches, and other strategies are more fully explained in the [Reader Help document](#) and the [Search Help document](#). The [stopword list](#) used in the indices is found at the end of this document.



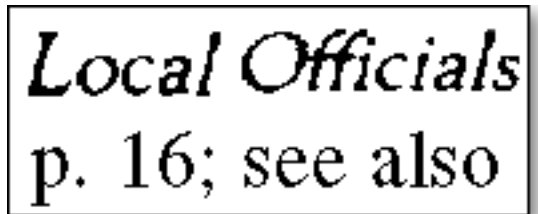
ABOUT THIS DISK...

How these documents were prepared

Most of the documents in the OTA Legacy collection were converted from paper to Acrobat™ form using an optical character recognition (OCR) process. The reports were scanned, page by page, and then letters and words on the pages were recognized and turned into editable text. The OCR process maintains the layout of the original paper pages, including pictures, charts, and other graphics, but it performs poorly on text that is small or indistinct.

When the OCR process fails to recognize a word within a certain confidence level, it places an *image* of the word on top of its best guess for the recognized text.

The substitutions appear slightly "fuzzy", as in the words "Local Officials" in the image shown here, but they can still be easily read on screen or in a printed copy. A search for the word "local" would fail to locate it on the page shown here if the best guess (stored invisibly behind the image) is incorrect.



Local Officials
p. 16; see also



ABOUT THIS DISK...

Problems you may encounter

OTA's goal has been to prepare readable, useable electronic versions of its publications within the limits of current technology. The agency's printed reports contain typographical and artistic elements that present substantial challenges for the OCR process, including small fonts, grayscale graphics, and sections of reports printed on shaded backgrounds. As a result, the documents contained on these discs are imperfect—but they are readable and useable. The sections that follow explain some of the problems that may be encountered within the documents.

■ Formatting & recognition errors

Most of the recognition errors have been corrected within the main body of the documents, but footnotes, captions, sidebars, and other parts of the text still contain such errors as well as others such as improperly assigned fonts, inaccurately applied italics or bolding, and errors in formatting.

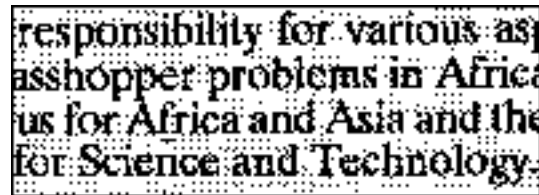
27 See for example, many of the articles in *Proceedings of the American Council for an Energy-Efficient Economy*.
SOURCE: Office of Technology Assessment,



ABOUT THIS DISK...

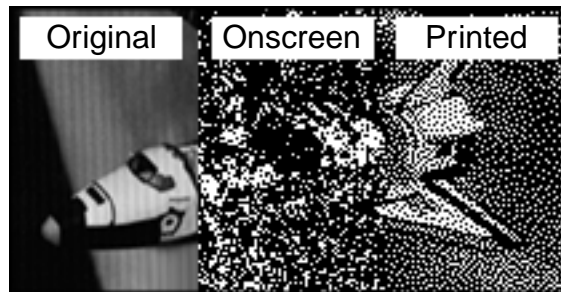
■ Shaded backgrounds

Some of the pages were printed on a gray background that was not amenable to text recognition through OCR. These pages have a speckled appearance and a large number of words replaced by images.



■ Indistinct screen display

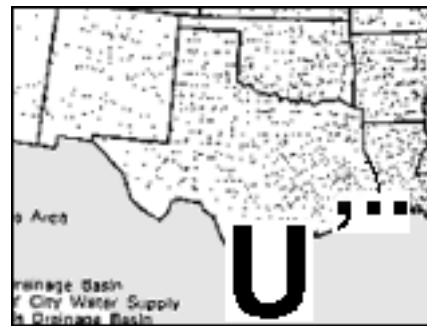
Many reports contain photographs that were originally printed in shades of gray. The grayscale information could not be preserved; instead, these graphics are stored as high-resolution black and white images. They are displayed onscreen at much lower resolution and may appear blurred or indistinct, but printed versions are more faithful to the original images. (Small white bands may sometimes appear in printed copies.)



ABOUT THIS DISK...

■ Artifacts within graphics

Occasionally, the OCR process “recognizes” text where it doesn't really exist, as in this sample where the lower tip of Texas has been converted into a large letter. Most of these errors have been removed, along with other common mistakes such as replacing lines of periods with asterisks or commas in tables of contents.



Recent reports

More recent reports were converted directly into Acrobat format as part of the normal publishing process. Some of these reports contain a large number of custom fonts embedded within the document. Adobe recommends reserving a memory cache of 50K per font using the ATM™ control panel; if garbled text appears within the body of a report, try increasing the size of the ATM font cache.



ABOUT THIS DISK...

The OTA Legacy on the World Wide Web

Three separate institutions maintain archives of the OTA electronic publications:

The Woodrow Wilson School of Public Policy, Princeton University

<http://www.wws.princeton.edu/~ota/>

Superintendent of Documents, U.S. Government Printing Office

<http://www.access.gpo.gov/ota/>

The National Academy of Sciences

<http://www.ota.nap.edu/>

GPO and NTIS

Paper copies of OTA reports and additional copies of the *The OTA Legacy: 1972-1995* CD-ROM set can be ordered through the the Superintendent of Documents of the Government Printing Office (GPO). Use the **order form**, call (202) 512-1800, or write:

Superintendent of Documents
U.S. Government Printing Office
P.O. Box 371954
Pittsburgh, PA 15250-7954



ABOUT THIS DISK...

OTA publications are also available in either paper or microfiche form from the National Technical Information Service (NTIS). To confirm prices and place an order, call (703) 487-4650 or (800) 553-NTIS.

The Depository Library Program

Many OTA reports were distributed to Regional Depository Libraries throughout the country and may be included in the Government Documents collection of university and public libraries in your area. Consult your local librarian for additional information or contact:

Library Services Program
U.S. Government Printing Office
Washington, DC 20401-9325
(202) 512-1114

U.S. Government Bookstores

GPO operates U.S. Government Bookstores around the country that stock some OTA titles and can special order any OTA report currently offered for sale. For more information, call one of the following bookstores:

Cont'd...



ABOUT THIS DISK...

Alabama

U.S. Government Bookstore
O'Neill Building
2021 Third Avenue, North
Birmingham, AL 35203
Tel: (205) 731-1056
Fax: (205) 731-3444

California

U.S. Government Bookstore
ARCO Plaza, C-Level
505 South Flower Street
Los Angeles, CA 90071
Tel: (213) 239-9844
Fax: (213) 239-9848

U.S. Government Bookstore
Marathon Plaza, Room 141-S
303 2nd Street
San Francisco, CA 94107
Tel: (415) 512-2770
Fax: (415) 512-2776



ABOUT THIS DISK...

Colorado

U.S. Government Bookstore
Room 117, Federal Building
1961 Stout Street
Denver, CO 80294
Tel: (303) 844-3964
Fax: (303) 844-4000

U.S. Government Bookstore
Norwest Banks Building
201 West 8th Street
Pueblo, CO 81003
Tel: (719) 544-3142
Fax: (719) 544-6719

District of Columbia

U.S. Government Bookstore
U.S. Government Printing Office
710 North Capitol Street, NW
Washington, DC 20401
Tel: (202) 512-0132
Fax: (202) 512-1355

U.S. Government Bookstore
1510 H Street, NW
Washington, DC 20005
Tel: (202) 653-5075
Fax: (202) 376-5055



ABOUT THIS DISK...

Florida

U.S. Government Bookstore
100 West Bay Street, Suite 100
Jacksonville, FL 32202
Tel: (904) 353-0569
Fax: (904) 353-1280

Georgia

U.S. Government Bookstore
First Union Plaza
999 Peachtree Street, NE, Suite 120
Atlanta, GA 30309-3964
Tel: (404) 347-1900
Fax: (404) 347-1897

Illinois

U.S. Government Bookstore
One Congress Center
401 South State Street, Suite 124
Chicago, IL 60605
Tel: (312) 353-5133
Fax: (312) 353-1590

Maryland

U.S. Government Printing Office
Warehouse Sales Outlet
8660 Cherry Lane
Laurel, MD 20707
Tel: (301) 953-7974
Tel: (301) 792-0262
Fax: (301) 498-8995



ABOUT THIS DISK...

Massachusetts

U.S. Government Bookstore
Thomas P. O'Neill Building
10 Causeway Street, Room 169
Boston, MA 02222
Tel: (617) 720-4180
Fax: (617) 720-5753

Michigan

U.S. Government Bookstore
Suite 160, Federal Building
477 Michigan Avenue
Detroit, MI 48226
Tel: (313) 226-7816
Fax: (313) 226-4698

Missouri

U.S. Government Bookstore
120 Bannister Mall
5600 East Bannister Road
Kansas City, MO 64137
Tel: (816) 765-2256
Fax: (816) 765-8233

New York

U.S. Government Bookstore
Room 110, Federal Building
26 Federal Plaza
New York, NY 10278
Tel: (212) 264-3825
Fax: (212) 264-9318



ABOUT THIS DISK...

Ohio

U.S. Government Bookstore
Room 1653, Federal Building
1240 East 9th Street
Cleveland, OH 44199
Tel: (216) 522-4922
Fax: (216) 522-4714

U.S. Government Bookstore
Room 207, Federal Building
200 North High Street
Columbus, OH 43215
Tel: (614) 469-6956
Fax: (614) 469-5374

Oregon

U.S. Government Bookstore
1305 SW First Avenue
Portland, OR 97201-5801
Tel: (503) 221-6217
Fax: (503) 225-0563



ABOUT THIS DISK...

Pennsylvania

U.S. Government Bookstore
Robert Morris Building
100 North 17th Street
Philadelphia, PA 19103
Tel: (215) 636-1900
Fax: (215) 636-1903

U.S. Government Bookstore
Room 118, Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222
Tel: (412) 644-2721
Fax: (412) 644-4547

Texas

U.S. Government Bookstore
Room 1C50, Federal Building
1100 Commerce Street
Dallas, TX 75242
Tel: (214) 767-0076
Fax: (214) 767-3239

U.S. Government Bookstore
Texas Crude Building
801 Travis Street, Suite 120
Houston, TX 77002
Tel: (713) 228-1187
Fax: (713) 228-1186



ABOUT THIS DISK...

Washington

U.S. Government Bookstore
Room 194, Federal Building
915 Second Avenue
Seattle, WA 98174
Tel: (206) 553-4270
Fax: (206) 553-6717

Wisconsin

U.S. Government Bookstore
Suite 150, Reuss Federal Plaza
310 West Wisconsin Avenue
Milwaukee, WI 53203
Tel: (414) 297-1304
Fax: (414) 297-1300





ABOUT THIS DISK...

Project Staff

William Creager

Project Director

Mary Lou Higgs

Manager, Publishing
Services

Susan Hoffmeyer

Graphic Designer

Peter D. Blair

Assistant Director, OTA
*Industry, Commerce, and
International Security
Division*

Linda Long

Electronic Dissemination
Specialist

Vincent McCall

Systems Technician

DOCUMENT SCANNING AND CONVERSION

Input Solutions, Inc.

Gaithersburg, Maryland
(301) 948-6620

John R. Solomon

Vice President

Todd R. Celi

Service Bureau Production
Manager

TESTING AND PRODUCTION ASSISTANCE

George Ayoub, Alan Buzacott, Martha Dexter, David Jensen, Gretchen Kolsrud,
Chamond Liu, Mark Ritchie, and Siew-Lian Tan



ABOUT THIS DISK...

Acknowledgments

The Office of Technology Assessment wishes to extend special thanks to Adobe Systems Incorporated for their gracious donation of the *Adobe Acrobat Capture*TM software that made the *OTA Legacy* project possible.

Additional thanks to Vary Coates, Greg Eyring, Jean McDonald, and Eugenia Ufholz, who lent paper copies of rare OTA reports for this project.

The documents on the *OTA Legacy* CD-ROMs and websites represent 23 years of distinguished service to the Congress of the United States by more than 700 alumni of the Office of Technology Assessment and many thousands of outside contributors, reviewers, and advisors from the academic, governmental, business, and nonprofit communities.



ABOUT THIS DISK...

Recommended citation for this collection: U.S. Congress, Office of Technology Assessment, *The OTA Legacy: 1972-1995*, (Washington, DC: U.S. Government Printing Office, February 1996).

Please cite quotations from specific reports individually. A recommended citation form is found on the second page of many of the reports. All OTA assessments and the navigational materials on this disk are in the public domain, but the historical articles and press accounts are protected by the copyrights held by the original publishers and may not be reproduced or distributed in electronic, paper, or any other form.

The Adobe™ Acrobat Reader software distributed on the first and last disks of this set is Copyright © 1987-1995, Adobe Systems Incorporated. All rights reserved. Use of the software is governed by the Adobe Systems Incorporated Electronic End User License Agreement.



ABOUT THIS DISK...

Stopword list

Stopwords are commonly-used words that are excluded from the indices used by the *Search* command in order to make searching for more substantive terms faster. Searches that include stopwords from the list below will fail, so avoid searching for phrases such as "trade *between* China *and* Thailand". In addition, numbers such as "1990" are not included in the indices.

A	An	Before	From
a	an	before	from
About	And	Between	Further
about	and	between	further
Above	As	But	Here
above	as	but	here
After	At	By	However
after	at	by	however
Also	Be	Either	If
also	be	either	if
Although	Because	For	In
although	because	for	in



ABOUT THIS DISK...

Into
into
Now
now
Of
of
On
on
Or
or
Other
other
Out
out
Over
over
Since

since
Such
such
Than
than
That
that
The
the
Then
then
There
there
Therefore
therefore
These
these

This
this
Those
those
Through
through
Thus
thus
To
to
Under
under
Until
until
Upon
upon
What

what
When
when
Where
where
Whether
whether
Which
which
While
while
With
with
Within
within
Without
without

