

A N N U A L  
R E P O R T

The Institute of Electrical and Electronics Engineers, Inc.

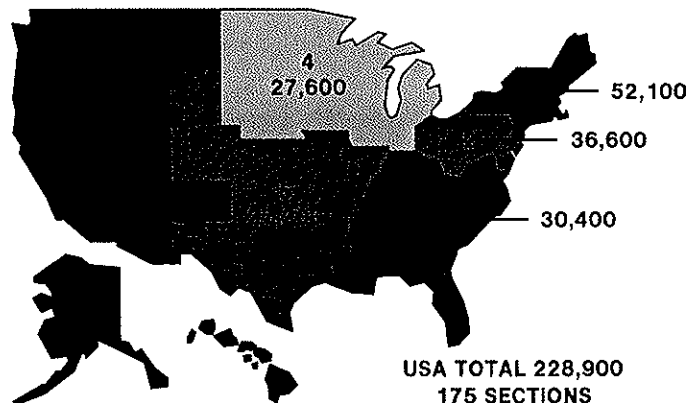
UNITED STATES ACTIVITIES BOARD  
1986 ANNUAL REPORT





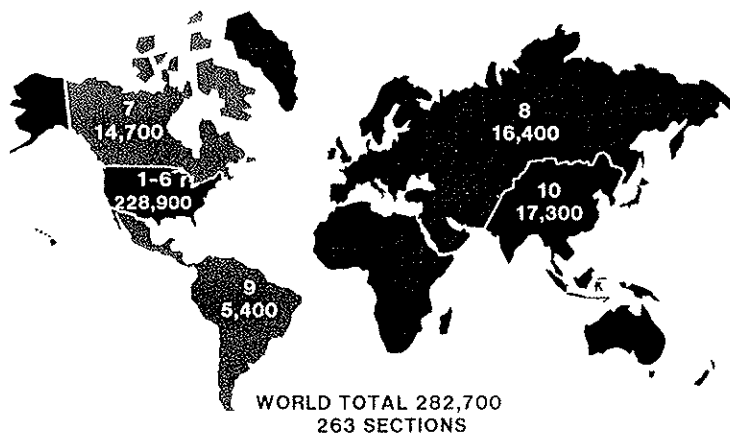
## IEEE MEMBERSHIP -- USA REGIONS

(December 31, 1986)



## IEEE MEMBERSHIP BY REGION

(December 31, 1986)



# IEEE United States Activities Board 1986 Annual Report

## Introduction

THE UNITED STATES ACTIVITIES BOARD (USAB), one of the major Boards of The Institute of Electrical and Electronics Engineers, Inc. (IEEE), is dedicated to enhancing the standing of members in the electrical, electronics, and computer engineering fields and to improving the quality of life through the constructive application of electrotechnology. Electrotechnology encompasses such fields as aerospace, computers and communications, biomedicine, electric power, and consumer electronics. USAB is an IEEE resource helping convey views on technology policy and member professional issues to the Federal government, industry, other professional societies, news media, public interest groups, and the public at large.

## USAB Goals and Accomplishments

USAB's 1986 goals, as outlined by its chairman, Carleton A. Bayless, included: improving career opportunities for engineers, enhancing math and science education at the precollege level, and improving productivity of U.S. industry. According to Mr. Bayless, who is also IEEE Vice President of Professional Activities, USAB seeks to:

- Assist members who are unemployed;
- Address such concerns as hiring engineers from other countries at lower salaries than their counterparts in the U.S.;
- Protect pension plans that are affected by layoffs and mergers; and
- Support career updating in fields that are constantly changing.

The USAB Chairman summarized major accomplishments of 1986 including: the enhancement of the Institute's reputation in Washington and among the public in general, a more active stance on career and sociotechnical issues, and an increased involvement with members at the local level.



USAB Chairman Carleton A. Bayless

## Federal Legislative Activities

**Federal Legislative Agenda.** While preparing a *Federal Legislative Agenda* for the 100th Congress that convened in 1987, the USAB National Government Activities Task Force identified the following major issues: retirement income benefits, intellectual property rights, computers and communications, technology transfer, professional careers of IEEE members, engineering education, energy policy, R&D, civilian space policy, and technological competitiveness.

**Member Professional Issues.** Among the professional issues addressed to advance the standing of members were: tax reform, continuing education, engineering utilization, and age discrimination.

On the subject of *tax reform*, the USAB Pensions Committee urged members to support a Congressional compromise that would preserve the maximum possible tax incentives for investment in individual retirement accounts (IRAs); provide for preferential treatment of long-term capital gains; and incorporate retirement equity provisions affecting pension coverage, vesting, and integration. As a result of the Pensions Committee's contacts with constituents, vesting requirements were eased and equity provisions expanded. However, deductibility for IRAs was limited to certain income brackets and is no longer available to all employees.

Other member professional issues debated by USAB on Capitol Hill included: support for a *continuing education tax credit* and *improved utilization of engineering resources*, as well as *opposition to age discrimination* in employment and *opposition to an extension of visas* to admit non U.S. engineers on a "blanket basis" rather than "case by case."




Strategic Defense Initiative Organization Deputy Director Gordon A. Smith (left) with USAB Chairman Bayless and Professional Activities Staff Director Leo C. Fanning (right) in Washington

**Sociotechnical Issues.** Among the sociotechnical issues (with both social and technological components) addressed in 1986 were: R&D budgets, technology transfer, availability of Japanese technical translations, and semiconducting electronic materials research.

With the support of various IEEE Committees on Capitol Hill, Congress acted favorably on continuing NASA's Advanced Communications Technology Satellite (ACTS) program; increasing funding for the National Bureau of Standards' Institute for Computer Science and Technology as well as the Department of Energy's Magnetic Fusion, Electric Energy Systems, and Energy Storage programs; and continuing support for Department of Defense research, including the Microwave/Millimeter Wave Monolithic Integrated Circuits (MIMIC) program.

The IEEE Technology Transfer Committee, including representatives from the Institute's five major Boards, supported export controls preventing the flow of militarily-critical products and technical information to the Eastern Bloc. But the Committee emphasized that *unclassified* fundamental research results should be published in open literature, arguing that sharing novel technological ideas advances the state of the art.


**IEEE/USAB  
LEGISLATIVE ALERT**

To develop and expand our capability to respond rapidly to key public policy issues affecting IEEE members, the engineering profession as a whole, and the national interest.

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## Your Help Needed On Tax Reform

Conferees representing the powerful Ways and Means and the Senate Finance Committees are meeting to determine the final shape of H.R. 8538, the Tax Reform Act of 1986. Among the most important decisions to be hammered out over the next few weeks will be compromise provisions on the treatment of individual retirement accounts and capital gains, as well as proposed retirement equity amendments affecting private pension plans.


Because of the critical importance of these provisions and because your opinions are critical to the process, the IEEE/USAB National Activities Board (USAB) Pensions Committee urges you to communicate with your Congressman and Senators and to do so immediately. And learn to convey your views to the conferees.

- Support a compromise that will preserve maximum possible tax incentives for investment in individual retirement accounts.
- Support a compromise that provides for preferential treatment for long-term capital gains.

- Support inclusion of the Senate's retirement equity provisions (general coverage requirements, vesting periods, and integration rules) in the final version of the tax bill.

If your Senator or Representative is unable to come to the telephone, ask to speak with the staff person who is working on the Tax Reform Act. The Washington office of your elected Representative can be reached through the U.S. Capitol, telephone (202) 654-3121.

If you have questions or need additional information, contact Vito O'Neill or Tom Burke in IEEE's Washington Office, 1111 16th Street, N.W., Suite 808, Washington, D.C. 20036, telephone (202) 755-0011. Please alert Vito or Tom in our Washington Office of any action you have taken.



THE INSTITUTE OF ELECTRICAL  
AND ELECTRONICS ENGINEERS, INC.  
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In 1986, Congress authorized \$1 million for Fiscal Year (FY) 1987 to make translations of Japanese technical literature available to more scientists and engineers. Prior to authorization of funds, the Committee on Communications and Information Policy (CCIP), a joint committee of the Technical Activities Board (TAB) and USAB, presented testimony to the House Science and Technology Committee that endorsed wider dissemination of these translations. In addition, USAB approved a Position Statement supporting this effort that stated: "Japan has contributed strongly to the state of the art in many special fields of electrotechnology. It is important that information about these Japanese advances be readily available on a worldwide basis."

In the same year, a joint TAB-USAB task force of the IEEE Defense R&D Committee contributed to the development of a Federal initiative calling for creation of semiconducting electronic materials research centers. Beginning in 1988 or 1989, each center could receive \$12 million per year for five years. This effort represents one of the first times IEEE initiated a technical program in cooperation with the Federal Government.

Also, in 1986, the CCIP Supercomputer Subcommittee supported the creation of an interagency supercomputer software R&D laboratory to assist in the development of adequate, compatible supercomputer software. And the Supercomputer Subcommittee produced an informal glossary of terms associated with supercomputing.

The Health Care Engineering Policy Committee published a brochure describing its goals. The Committee has also developed a Position Statement on evaluating medical devices.



Fredrick Matos

**Congressional Fellows.** The Congressional Fellows program includes electrical and electronics engineers and allied scientists who are competitively selected to serve a one-year term on the personal staff of individual Senators or Representatives or on the professional staff of Congressional Committees. IEEE's Congressional Fellows have typically been drawn from among its most senior and experienced members. Between 1973 and 1986, 30 IEEE Congressional Fellows have worked with members of Congress lending a scientific and engineering perspective to Government.

A total of five IEEE Congressional Fellows served on Capitol Hill in 1986. Three began their assignments on the Hill: *Steinar Dale*, who is serving as a member of the committee staff of the House Science and Technology Committee and is a principal staff member of the Committee's Task Force on Technology Policy; *Lawrence P. Grayson*, who is serving as a member of the personal staff of Representative Jack Kemp (R-New York), and is assigned to a special global competitiveness project; and *Fredrick Matos*, who serves on the personal staff of Representative Thomas J. Tauke (R-Iowa), and is studying telecommunications issues.



Steinar Dale



Lawrence P. Grayson



IEEE Congressional Fellow Stig A. Annestrand (left) with Representative Sid Morrison (R-Washington)

## Federal Executive Branch Activities

In February, following a year of private and public discussions with IEEE and other societies, the Department of Defense (DOD) published a "draft instruction" outlining its policy on the clearance of DOD-sponsored papers for presentation at technical conferences. The instruction set specific limits on the amount of time DOD officials can take to review papers written by its employees or contractors.

The Technology Transfer Committee, which spearheaded the intersociety effort leading to the draft instruction, continued to address concerns about access to sensitive information through unclassified data bases in the private and government sectors, including the British Institution of Electrical Engineers' INSPEC. In letters written to the U.S. Air Force Management Analysis Group, Technology Transfer Committee Chairman Benjamin J. Leon expressed concern about limiting access to *unclassified* DOD data bases:

The data bases...are an extremely valuable asset to the engineering, scientific, and other technical professionals in the Free World, and unrestricted access...is a major enhancement to the productivity of these professionals. Thus, any restrictions placed on access...would impede the ability of the United States to advance both military and civilian technology.



Senator Pete V. Domenici (R-New Mexico) addressing IEEE R&D Briefing in Washington

In response to requests for comments about *National Security Directive Decision 145*, which affects voice and data communications in both classified and "sensitive" non-classified areas, CCIP urged groups responsible for implementing the directive to "exercise extreme restraint...to identify and bring about the protection of private-sector systems that handle non-government information."

### IEEE 1986 President's Visits with Federal Officials.

IEEE 1986 President Bruno O. Weinschel visited Federal officials at the Office of Science and Technology Policy, Defense Department (Undersecretary of Defense for R&D), Justice Department (Deputy Assistant Attorney General for Regulatory Affairs), and Office of the U.S. Trade Representative. Subjects discussed included: the balance of trade, enhancing U.S. industrial competitiveness, quality and depth of technical education in the U.S., and mid-career training of technical personnel.

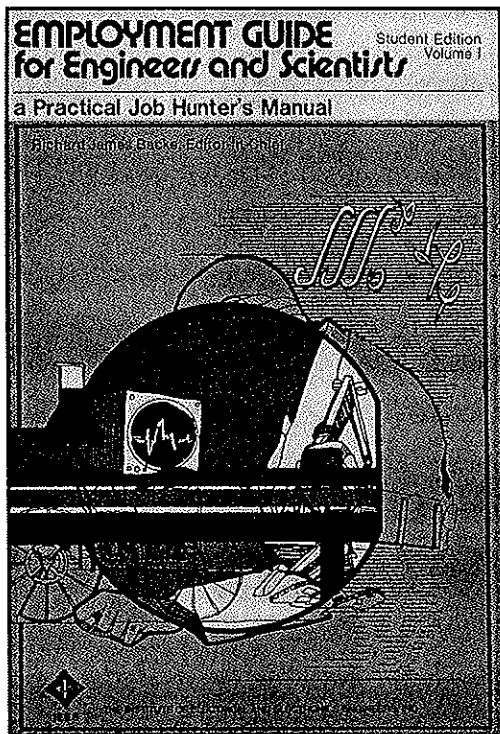


IEEE 1986 President Bruno O. Weinschel discusses enhancing U.S. industrial competitiveness on ESPN cable network's Nation's Business Today.



## Employment Assistance

**Professional Engineering Employment Registry (PEER).** PEER, the computerized service allowing members to enter their resumes into a data base for matching with employers' job offerings, is being expanded to include a consultants' registry, at the request of the USAB Employment Assistance Committee. The PEER data base is available to members who have a modem and personal computer. In addition, information can be obtained over the telephone through the service's interactive computer.



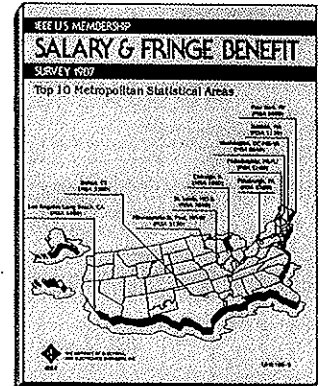
**Employment Guide.** A two-volume reprint of the Student Edition of the *Employment Guide for Engineers and Scientists* was completed, including a separate volume with an expanded employer directory. The first volume provides guidance on career planning, resume writing, interviewing, and other suggestions on finding professional employment. The second volume contains a listing of employers of IEEE members including some 1,700 company names, addresses, telephone numbers, and contacts. The updated Student Edition (Catalog No. UHO174-3) can be ordered through Publications Sales, IEEE Service Center, P.O. Box 1331, 445 Hoes Lane, Piscataway, NJ 08855-1331, telephone (201) 981-1393. It is available to members for \$8.95 and to non-members for \$11.95.

## Career Maintenance and Development

**Student Professional Awareness Conferences (S-PACs).** To increase professional awareness among IEEE student members, USAB S-PACs were held at 33 colleges and universities. They were also convened at two IEEE technical meetings, the Winter Power Meeting and SOUTHEASTCON.

**Section Careers Workshop.** A 10-hour workshop, "Careers: Phase II," was developed covering values and assumptions that can enhance or limit members' professional contributions. The workshop, organized by the USAB Career Maintenance and Development Committee for IEEE Sections, includes short lectures, small group discussions, and videotapes about mid-life career issues. A brief preview videotape and brochure are available from the IEEE Washington Office.

**Fourth Biennial IEEE Careers Conference Record.** *Developing Careers: Issues for Engineers and Employers*, the record of the Fourth Biennial IEEE Careers Conference, was published in 1986. It can be ordered through the IEEE Service Center by specifying Catalog No. UH0170-1. Cost is \$15 for members and \$20 for nonmembers.



Work on the 1987 Salary Survey, to be published in May, began in 1986.

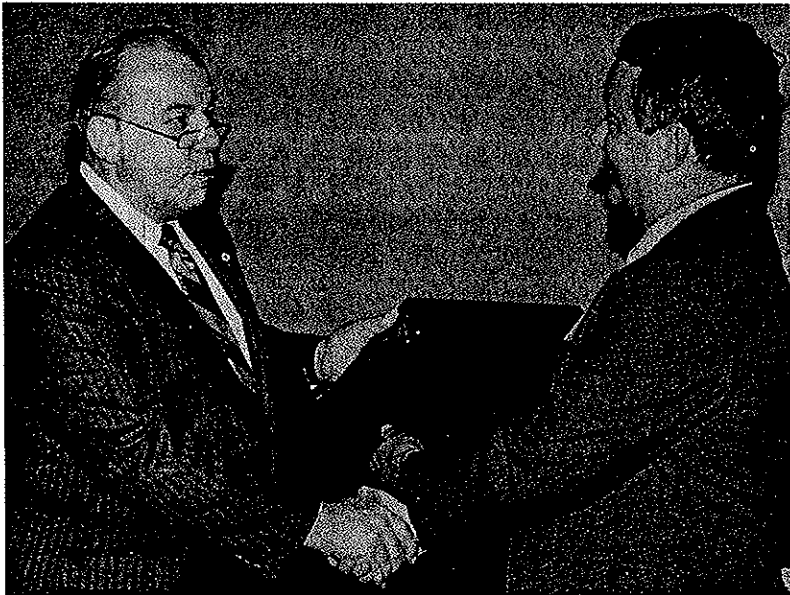


William P. Rogers is interviewed by ABC News prior to accepting USAB's 1986 Distinguished Public Service Award for his work as chairman of the Presidential Commission on the Space Shuttle Challenger Accident.



## Professional Recognition

**USAB Awards.** USAB awards are given for the purpose of recognizing outstanding service and contributions to furthering the professional purposes of the Institute. Awards announced for 1986 included: *Professionalism Award* to Richard J. Gowen; *Citation of Honor* to Jack S. Andresen, Walter R. Nial, and Joseph A. Edminister; *Regional/Divisional Professional Activities Award* to James F. Strother, Alvin Roelse, and Layton Bergen; and *Professional Achievement Awards* to Joseph M. Biedenbach, Don E. Cottrell, William Jones, James Leonard, William Sackett, and William F. Wilkes. A new category of awards to recognize journalists was created in 1986, and nominations were also solicited for 1987 awards.



IEEE 1984-85 Professional Activities Vice President Russell C. Drew presents USAB Professionalism Award to Richard J. Backe at IEEE 1986 Annual Meeting in San Jose, California.

## Distinguished Public Service.

Included among USAB's 1986 awards was a commendation for *Distinguished Public Service* given to former Secretary of State William P. Rogers who was cited for his work as chairman of the Presidential Commission on the Space Shuttle Challenger Accident. In presenting the award, USAB's Awards and Recognition Committee stated: "The final [accident] report...could have had adverse long-term effects on the U.S. space program [but] stands as a model of scientific inquiry."

## Public Communications

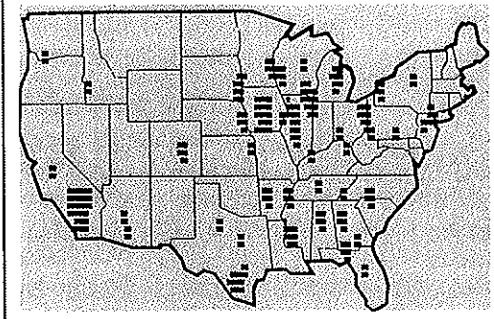
### Precollege Math and Science Education.

USAB's slide-tape presentation, "Education: The Key to America's Future," was distributed widely in 1986 to volunteers, members, and school officials (including chief state school officers, national school board association members, and area superintendents). The presentation is designed to increase public awareness of problems that currently exist in math, science, and technology education and of the need to train a technically-literate population. It is also being distributed to 23,000 community-based organizations nationwide.



"Pointers for Parents" article offers USAB slide-tape presentation on "Education: The Key to America's Future."

Each black rectangle represents one newspaper that has published your story: "Pointers for Parents."



This release has generated 632 newspaper articles in 32 different states, with a circulation of 2,406,240 based on computer-projected efficiency of 25%—an estimate based on the fact that when releases offer a booklet, 75% of the write-ins come from places from which there are no clippings in hand.

There are 34 placements from the top 50 markets, 51 from the top 100 markets, and 86 from the top 100 markets.

The cost of buying this much space would have been \$54,889.20—12/86 press clippings analysis

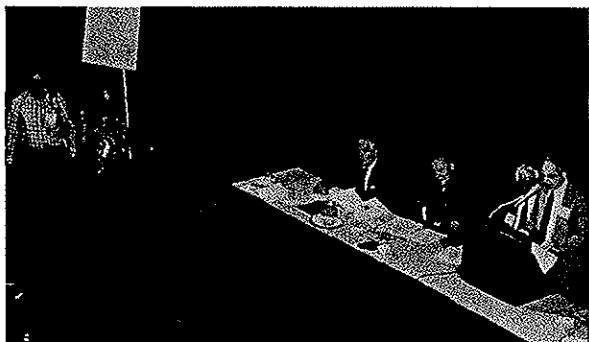


In addition, more than 600 newspaper articles describing specific actions for parents, educators, and other professionals (as mentioned in the slide-tape presentation) have appeared in suburban papers nationwide, with a combined circulation of close to 2.5 million. And a third special education issue of IEEE *IMPACT* focused on student competitions and other programs to stimulate interest in the study of math, science, and technology. The September, 1986, issue is available on request to the IEEE Washington Office.

**Age Discrimination.** Two revised Professional Activities Council for Engineers (PACE) *Source Sheets* were issued last year, bringing the series total to 12. One describes major provisions of the *Age Discrimination in Employment Act*, IEEE's policy on age discrimination, and some manifestations of age discrimination in the work place. Another provides information on USAB support available in age discrimination matters. The remaining *Source Sheets* cover such topics as pensions, ethics, and legal services. All are available on request to the IEEE Washington Office.

### 'TAB and USAB: Partners in Building a Stronger Profession.'

Technical and professional activities of the Institute were coordinated in Washington through the leadership of Professional Activities Vice President Bayless and Technical Activities Vice President Merlin G. Smith. One result of this cooperation was the production of a brochure on how TAB and USAB work together to build a stronger profession by assisting IEEE Societies and the individual IEEE member. Developed for distribution at Society conferences, *TAB and USAB: Partners in Building a Stronger Profession*, is available on request to the IEEE Washington Office.



Washington, DC news crew records opening of USAB/NCOA industry conference on "The Aging Workforce."

## Briefings/Workshops/Conferences

The following briefings, workshops, and conferences were held in 1986. The Technology Transfer Committee and the American Association for the Advancement of Science (AAAS) cosponsored a *January* symposium on "Information Controls and Technological Competitiveness," including a "Members of Congress Only" breakfast meeting. Also, in *January*, Technology Transfer Committee representatives briefed a National Academy of Sciences' panel which was considering the effect of national security controls on international technology transfer.

At an R&D Briefing in *February*, Federal officials told IEEE members and media that science and engineering R&D programs were faring generally well, despite uncertainty over reductions due to budget-balancing requirements.

On *April 9-10*, USAB and the National Council on Aging (NCOA) cosponsored an industry conference devoted to examining the needs of a maturing workforce. The conference record, entitled *The Aging Workforce: The Challenge of Utilization*, can be ordered through the IEEE Service Center (Catalog No. UH0173-5) for \$7.50 (members) and \$10.00 (nonmembers).

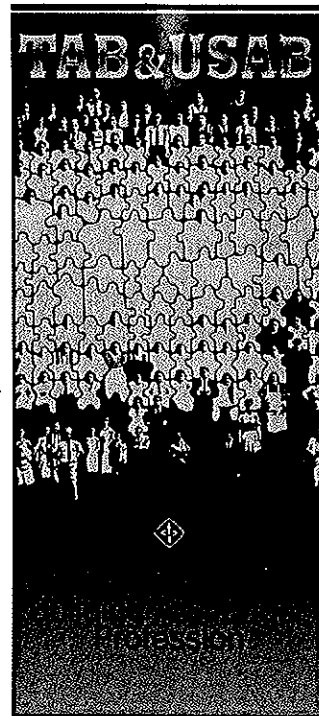
In *May* and *June*, the CCIP Privacy Subcommittee convened meetings on political issues in communications and computer security and on new data encryption standards being developed at the National Security Agency.

Some 200 IEEE members met in Phoenix, AZ, over the *Labor Day Weekend* for the 1986 *National PACE Workshop* which included sessions on pensions, aging, continuing engineering education, communications, and student professional awareness. An IEEE candidates' debate was also held.

In *September*, a Technology Policy Conference Committee seminar on "R&D in the U.S." was convened to provide an overview of how U.S. research and development is funded and conducted and what benefits are derived from it.



IEEE 1987 President-Elect Candidates (left to right) Irwin Feerst, Russell C. Drew, and Merlin G. Smith participate in debate at USAB National PACE Workshop in Phoenix, Arizona.



## Interactions With Entities Outside IEEE

IEEE has interacted with numerous entities outside the Institute through USAB and the IEEE Washington Office. IEEE activities with the *American Association of Engineering Societies* (AAES) have included support of the umbrella group's "priority issues listing"; the Engineers and Scientists Joint Committee on Pensions (ESJCP); Engineering Manpower Commission (EMC); Technology Forecast and Assessment Committee; and Federal R&D Task Force.

USAB also provides financial support to the *Accreditation Board for Engineering and Technology* (ABET). ABET is the agency responsible for accrediting U.S. college programs in engineering and engineering technology.

In addition, two IEEE staff members serve on the *Access to Scientific and Technical Information* (ASTI) group with their counterparts from other organizations. IEEE staff members also participate in three other Washington office representatives' organizations.

TAB and USAB sponsored two IEEE student members as part of the *Washington Internship for Students of Engineering* (WISE) program. The students completed papers on supercomputers in industry and academia and Government's impact on engineering. TAB and USAB participation in the program will continue without formal review until 1988.

The Precollege Education Committee is working with the *Triangle Coalition for Science and Technology Education* and the *Blue Ribbon Panel on Math and Science Education*.

## Looking Ahead

In 1987, USAB is holding its Technology Policy Conference on February 17, an R&D Briefing on March 3, and a Careers Conference on October 14-16. USAB's *Salary and Fringe Benefit Survey* will be published in May. The IEEE entity is also promoting its programs at the Institute's 1987 Sections' Congress being held October 15-18. Finally, work continues in 1987 on a five-year program plan covering 1988-92 and including strategic, tactical, and operational components.

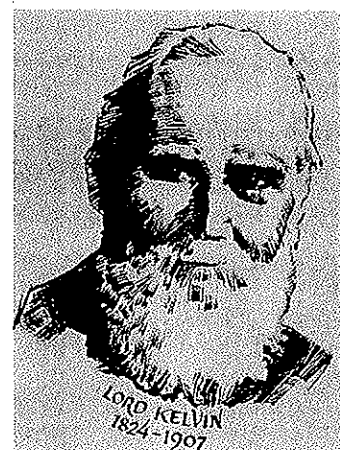
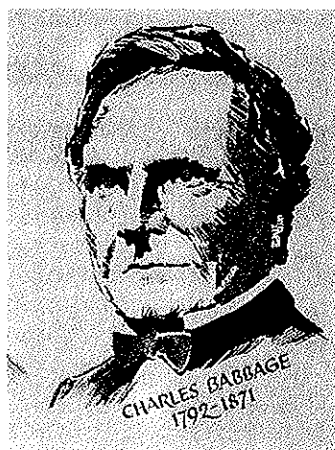
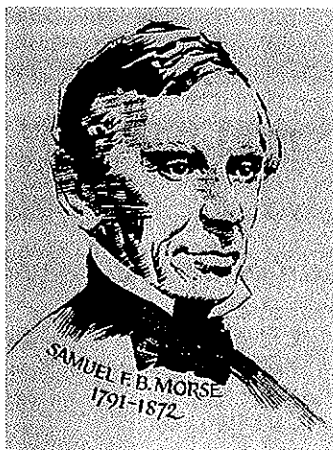
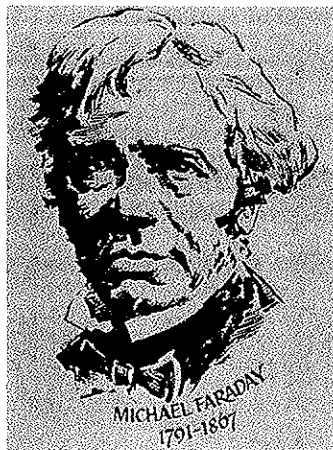


**Visit the IEEE Washington Office,  
1111-19th Street, N.W., Suite 608.**

Further information about this *Report* and USAB activities can be obtained from Pender M. McCarter, Manager, Public Information, IEEE Washington Office, 1111-19th Street, N.W., Suite 608, Washington, D.C. 20036-3690, USA, telephone (202) 785-0017. Continuous, updated recorded information about IEEE and USAB is available by calling (202) 785-2180.

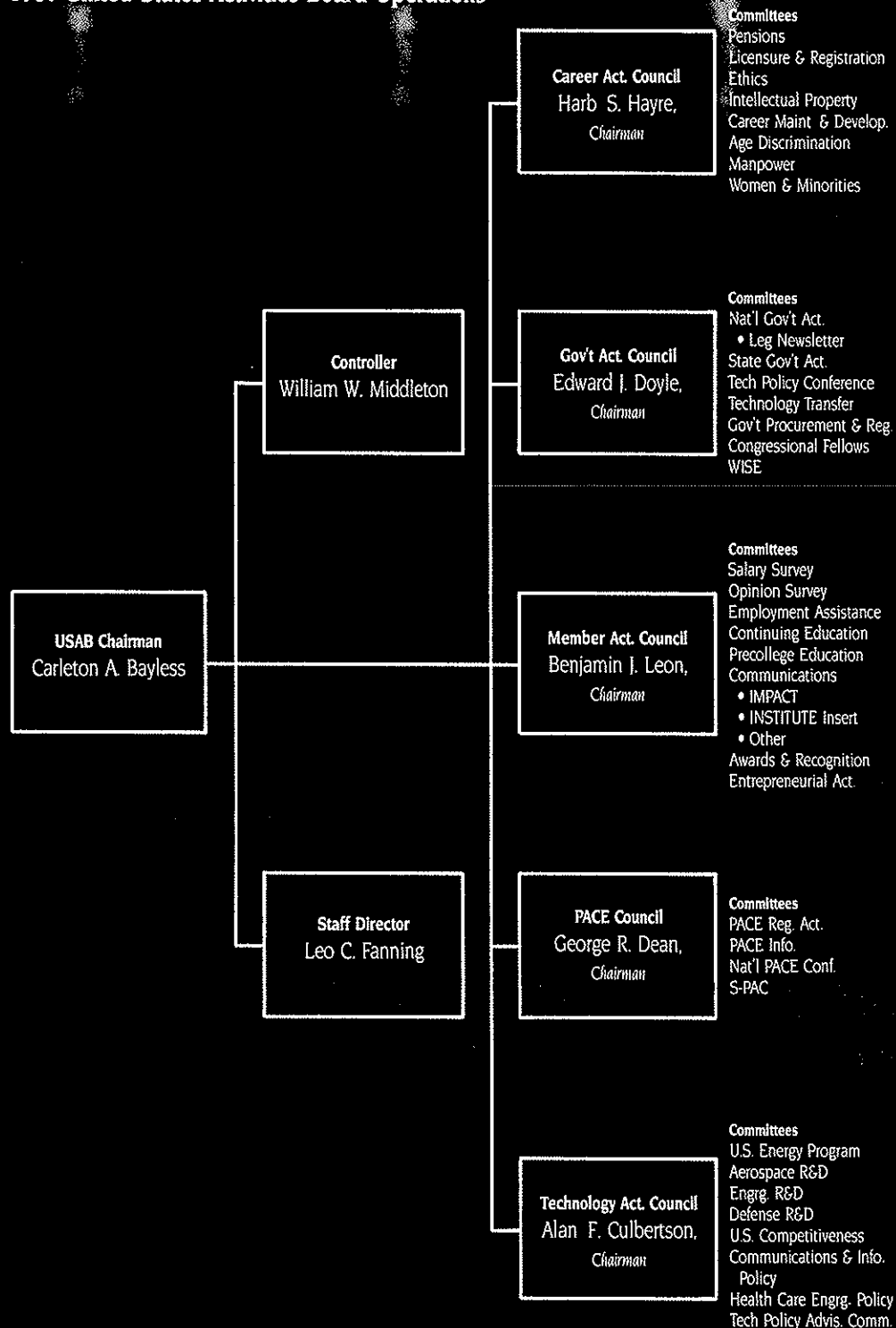


Brochure, describing the overall Institute, is available from the IEEE Washington Office.



Portion of mural in IEEE Washington Office commemorating engineering discovery and invention, a tribute to the technical excellence of 12 leading figures in the development of electrotechnology

## 1987 United States Activities Board Operations



## 1986 IEEE United States Activities Board

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Chairman, USAB

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The Institute of Electrical and Electronics Engineers, Inc.

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