

UPDATE

AFIPS Washington Report

Pender M. McCarter, AFIPS Washington Office

Hearings on new communications act begin

The House of Representatives has begun hearings on *H. R. 13015*, the *Communications Act of 1978*, which if passed will repeal the *Communications Act of 1934*.

The 217-page text of the proposed act, introduced June 6th after almost three years of preparation, would (1) abolish the Federal Communications Commission; (2) create the Communications Regulatory Commission; (3) provide regulation "to the extent marketplace forces are deficient"; (4) allow any common carrier to provide, through separate companies, all telecommunications-related services approved by the Communications Regulatory Commission; (5) require any monopoly to divest itself of equipment manufacturing; (6) establish access charges for carriers using local exchange facilities, to be handled in a Universal Service Compensation Fund administered by the Commission; (7) abolish the Commerce Department's National Telecommunications and Information Administration; and (8) create a National Telecommunications Agency.

Thus, the legislation would permit AT&T and other common carriers to provide a full range of computer services, require AT&T and GTE to

divest themselves of manufacturing arms, and enable the common carriers to recoup, through the Compensation Fund, losses incurred in opening services to competition.

Although the act has received generally favorable treatment from AT&T and industry, former FCC Commissioner Nicholas Johnson criticized it for "put [ting] us at the mercy of unregulated monopolies."

Rep. Lionel Van Deerlin (D-Calif.), chairman of the House Communications Committee, predicts some six weeks of hearings followed by a vote of the full House early next year. Van Deerlin, who cosponsored the bill with Rep. Louis Frey, Jr. (R-Fla.), anticipates final passage in 1980.

Senate holds hearings on Privacy Act

The Financial Institutions Subcommittee of the Senate Banking Committee held hearings on the *Right to Financial Privacy Act*, *S. 2096*, which would require advance notice to depositors before the federal government could obtain access to their bank records. The legislation would also allow depositors to contest dissemination of their records.

In a joint statement to the Senate subcommittee on May 17th, Rep. Edward W. Pattison (D-N.Y.) and

Rep. Barry M. Goldwater, Jr. (R-Calif.) argued that all "credit grantors" should be regulated by *S. 2096*, not just the depository institutions the proposed legislation presently covers.

Appearing the same day, deputy attorney general Benjamin R. Civiletti departed from previous Justice Department positions and endorsed the bill's pre-notice and recourse provisions. Mr. Civiletti recommended, however, that depositors be required to obtain a court order to block dissemination of their records. In addition, he asserted that he would want the legislation to exempt emergency situations in which advance notice might result in the destruction of evidence.

House committee approves EFT consumer legislation

In June the House Banking Committee acted favorably on *H.R. 13007*, which will amend the *Consumer Credit Protection Act*, establishing "rights, remedies, and responsibilities for all participants in the utilization of EFT services." The bill must now be voted upon by the full House.

The legislation, as it was reported out of the House Banking Committee, would (1) limit third party access to EFT records; (2) assign liability to financial institutions for losses arising from banks' failures to complete EFT transactions; (3) require financial institutions to correct all errors within a specified time; and (4) limit consumer liability for lost debit cards to \$50, with certain exceptions.

Erratum, July issue

Steven and Svetlana Kartashev's guest editors' introduction, "LSI Modular Computers, Systems, and Networks," in the July *Computer*, erroneously stated on p.7, "By the late 60's, the high cost of vacuum tubes, transistors, and diodes had prompted development of design techniques that minimized the component count in a computer." The sentence should have read "By the late 50's..."

We regret the error.

—Ed.

The Senate Banking Committee approved similar legislation in May, S. 3156. Both bills emerged from their respective committees minus previous provisions for reversing transactions, i.e., for stopping payment as now can be done with checks.

CONTU to recommend copyright for programs

In a June 6th NCC technical session, Michael Keplinger of the National Commission on New Technological Uses of Copyrighted Works announced that CONTU would recommend copyright protection for computer programs. According to Keplinger, the commission will define a computer program as "a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result."

Related government documents

Privacy. *Challenges of Protecting Personal Information in an Expanding Federal Computer Environment*, a General Accounting Office Report (LCD-76-102, April 28, 1978), is available from the GAO at (202) 275-6241, or through the AFIPS Washington Office, 1815 N. Lynn St., Suite 805, Arlington, VA 22209; (703) 243-3000.

EFT issues. Two NTIA reports, *Analysis of Certain Threats to EFT System Security* (PB 279-985/AS) and *Privacy Issues in Electronic Funds Transfer Systems* (PB 279-986), may be ordered through the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; (703) 557-4650.

Special report: transborder data flow

**Alexander D. Roth, Director,
AFIPS Washington Office**

"Observations on Transborder Data Flow," a report prepared by the AFIPS Panel on Transborder Data Flow, was distributed by the State Department to participants in a recent meeting of State's Subcommittee on Transnational Data Flows. The "Observations" are summarized as follows:

Terminology. Terminology is causing confusion, particularly in the US. While the granting of individual control over personal information is called "privacy protection" in the US and Canada, it is called "data protection" in Europe. The European term refers only to restrictions on personal data, even though the literal implications of "data protection" are broader. Also, the term "transborder data flow" is sometimes used to cover a number of quite different types of international data transmissions, some of which do not include personal data.

Restriction of non-personal data flow. International transmission of information could include books, journals, newspapers, films, broadcasts, telegrams and mail, as well as data communication. Care should be taken to examine national laws and proposed conventions for their potential restriction of information flow not involving personal data.

Effects on corporations. Extension of privacy protection to "legal persons" (i.e., corporations and various other organizations) would have a significant impact on automated recordkeeping within countries as well as across borders, since such extension would require (a) that legal persons disclose the existence and nature of all data bases held by them on other legal persons; (b) that corporations be permitted to inspect, challenge, and demand correction or deletion of information on them in other corporations' files; and (c) that corporations be able to limit dissemination or use of data on them in the absence of prior notice.

Stricter European controls. US privacy protection laws appear to provide less comprehensive privacy rights to individuals than do European data protection laws, especially with respect to government records and designated areas such as credit reporting. European laws cover private sector records; they also place restrictions on transmissions of personal data into the US which the US does not place on transmissions from the US into Europe.

Effect on sovereignty. Some countries have serious concerns that national sovereignty might be undermined by unforeseen unavailability of data or processing services

which were stored abroad, or by uncontrolled dissemination outside their borders of private information.

"Data havens." While certain countries could become data havens because they have few or no privacy laws, it is unlikely that governments would utilize foreign data havens. Private organizations may be able to evade privacy protection requirements just as effectively in their home country as in a data haven.

Security. Absolute security in a computer-based recordkeeping system does not appear possible at present, particularly in a multiuser transnational system with processing facilities and communications systems in several countries. Any legal requirement for very high degrees of security is likely to be unfeasible. Total security is precluded in any event by international agreements such as the International Telecommunications Convention of Malaga-Torremolinos, which permit nations to intercept, inspect, and stop any communications into their territories. In general, legislation involving technical requirements should not be drawn up until technical and economic feasibility analyses have been made.

Protectionism. While certain countries want to protect domestic industries against foreign data processing vendors or services, they are more likely to use traditional means such as tariffs, taxes, or duties, rather than the circuitous route of applying privacy and data protection laws.

Implementing a protection system. If an international convention extends privacy and data protection laws to cover international data transfers, the drafters of such a convention must consider who would be responsible for meeting privacy protection requirements. They will have to consider a system which will enable individuals to exercise their rights at an appropriate level of convenience.

Censorship danger. Regulation of non-automated transmissions by any convention may reduce opportunities for circumventing data protection restrictions, but may also provide an occasion for wholesale censorship.

Government, industry cooperation. Better communications are needed between government agencies that formulate US policies and positions on transborder data flows and US business and industry. Perhaps a

third party could collect sensitive information from industry and abstract it for use by the government.

The "Observations" cited a number of conclusions reached by the panel:

Problem definition. The first step to take is to clearly define the problems in transborder data flow. A statement of US objectives should then be developed so specific questions can be isolated.

Privacy and economics. It is important to separate national concerns for individual privacy and national security from economic concerns for increasing or decreasing present imbalances in data flows.

Nature of agreements. There are places for multilateral, bilateral, or unilateral agreements among the countries involved in obtaining an overall resolution.

Developing nations. In drafting data regulation agreements, industrialized countries should seek out the opinions and concerns of developing countries.

US relations with OECD. The US should not delay to confront and resolve any differences in views with the Organization for Economic Cooperation and Development.

Corporate experience. An analysis of international companies' experiences with nations which do not want certain data files transferred abroad may reveal a trend helpful to formulation of a US position.

Adverse effects of restrictions. The US must look beyond the privacy protection issue to the economic implications of restrictions on non-electronic information transfer. The following issues may have significant adverse effects on US industrial growth: extension of privacy laws to include corporate entities as protected persons; imposition of taxes upon the flow of information; regulation of the free flow of information; administrative reporting requirements for service suppliers or end users; jurisdictional conflicts which unduly inhibit or confuse service suppliers and end users; and tariff policies which would seriously affect the current economics of information transfer.

Effects on law enforcement. The failure of US laws to account for criminal justice data may restrict the availability of such data to law enforcement agencies and hinder

cooperation with other countries in law enforcement and criminal justice areas.

Sharing of technical details. The technological features offered by other countries to protect and control the information in their computer-communications network cannot be depended upon with confidence by other countries unless the techniques involved are published in open literature so that they can be fully analyzed and validated by the scientific and technical communities of the countries involved. This would make it more likely that ensuing legislation would be less restrictive.

The OECD Expert Group on Transborder Data Barriers and Protection of Privacy has a mandate to draft guidelines harmonizing personal privacy principles, and to study the social and economic implications of transborder data barriers. This guideline-drafting exercise will help resolve differences between European and non-European philosophies respecting transborder data flow. The subgroup which is to draft the OECD guidelines is scheduled to present its recommendations to the Expert Group in November.

TC-Micro members sought

The Technical Committee on Microprogramming, which promotes activities within the Computer Society in all areas of microprogramming, is seeking additional members.

According to Tom Rauscher, TC chairman, current topics of special interest include design and application of microprogrammable microprocessors, firmware engineering, and the use of microprogramming to effect language and application oriented computer architectures. TC-Micro activities include cosponsorship of the Annual Microprogramming Workshop, to be held this year November 19-22 at Asilomar; submission of articles to IEEE-TC; and preparation of sessions for IEEE conferences.

To participate in TC-Micro or to renew membership, contact Dr. Rauscher at GTE Laboratories, 40 Sylvan Road, Waltham, MA 02154.

Help needed in real-time Basic standardization and enhancement

Three committees currently involved in producing enhancement modules to the Minimal Basic standard approved last year (ANSI BSR X3.60, 1977) are soliciting contributions to their efforts from any party interested in standardizing and applying real-time Basic.

The committees involved are the TC2 committee of the International Purdue Workshop on Industrial Computer Systems (interested in industrial real-time Basic), and the ANSI X3J2 and European Computer Manufacturers Association TC21 committees (which worked together to produce Minimal Basic).

The Purdue committee has taken responsibility for the production of a specification for two enhancement areas, namely, real-time and exception handling. Each enhancement area is considered at two levels, where level 1 is to contain only those elements of the language required to make the module viable, and where level 2 is other elements. At present, the three committees are concentrating on producing a draft standard for all the level 1 enhancements, although the level 2 enhancements are specified in order that the boundaries between level 1 and level 2 may be identified.

The committees work separately, commenting on each other's work by mail and by having a liaison person, Gordon M. Bull, attend meetings of all three committees. There is an annual joint meeting of the committees to resolve outstanding problems and to allow the intermingling of membership to discuss various areas. The next such meeting will be held in Washington, DC, from November 6-10, 1978.

The functional capabilities document for the real-time module is presented below.

Functional capabilities. For use in real-time applications two new concepts must be introduced into Basic: concurrent activities with scheduling, synchronization and communication at run-time; and input/output to process objects. (Process objects are typically measurement and control points in a plant interface, such as temperature sensors or stepping motor controllers.)

Concurrent activities. These are introduced in level 1 by START statements activating "parallel sections" within a program. WAIT statements are defined to suspend a parallel section, and to allow it to continue at an absolute time after a timed delay, or in response to an "event" (a software signal or a hardware interrupt). Communication between concurrent activities is via normal variables, since all variables are global to the whole program.

Input/output. Process I/O is by means of IN and OUT statements that transfer data between process objects and computer memory. The names and attributes of communication paths used by the system to perform the I/O are given in declaration statements. In this way a program can be divided into two parts: an implementation dependent environment description; and implementation independent sections that share the environment description, and for which the particular process peripheral interface system is completely transparent.

Task concept. The level 2 enhancement introduces the concept of a task. A task, like a sub-program, is an independently compiled program with its own local variables, but is activated in the same way as a parallel section, rather than called with a parameter list. Inter-task communication is by statements that transfer messages over communication paths.

Other features under consideration for level 2 are a WHEN-clause to make scheduling statements conditional on events or time conditions, simple protection of process objects by "access key," and the concept of "process variables" to allow implicit I/O. If a filing system is implemented, the declarations can be put into one or more "environment description" files that are accessed by USE statements, thus making the executable part of the program completely independent of the process peripheral interface characteristics.

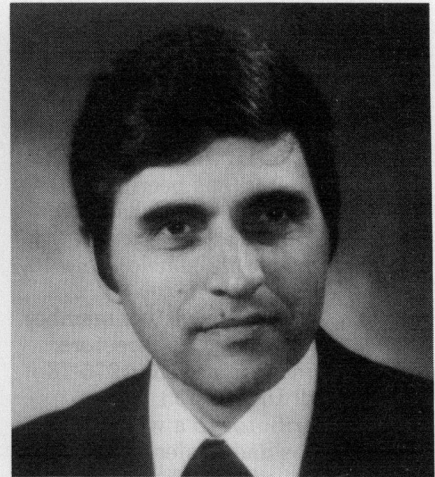
Those interested in this work should contact Gordon M. Bull, Computer Systems Group, The Hatfield Polytechnic, PO Box 109, Hatfield, Herts, UK, or Theodore J. Williams, Purdue Laboratory for Applied Industrial Control, Purdue University, West Lafayette, IN 47907.

Senator Jack Schmitt to keynote COMPCON '78 Fall

Senator Harrison H. "Jack" Schmitt (R-New Mex.), lunar module pilot for Apollo 17, will be the keynote speaker at COMPCON '78 Fall, to be held in Washington, DC, September 5-8. Technical keynotes will be given by Henry Geller, assistant secretary, Department of Commerce; Paul Henson, chairman, United Telecommunications Corporation; and Lewis Branscomb, vice president and chief scientist, IBM.

Schmitt, who joined the NASA Apollo program in 1965, was the backup lunar module pilot for Apollo 15. As the lunar module pilot of Apollo 17, he landed on the moon in the Valley of Taurus-Littrow in 1972. He served as NASA assistant administrator for energy programs from May 1974 to August 1975, when he resigned from the space program to enter the senatorial race. Schmitt serves on the Commerce, Science, and Transportation Committee and the Banking, Housing and Urban Affairs Committee; he is vice-chairman of the Ethics Committee.

COMPCON 78 Fall, devoted to the theme of "Computer Communications



Senator Jack Schmitt, a former astronaut, will address the COMPCON 78 Fall Plenary Session on Wednesday, September 6, in Washington, DC.

Networks," will feature technical sessions on topics such as voice storage systems, packet bus systems, analysis of network performance, privacy networks, and computer cryptography. For the complete advance program see the July *Computer*, pp. 77-84, or write to COMPCON, PO Box 639, Silver Spring, MD 20901.

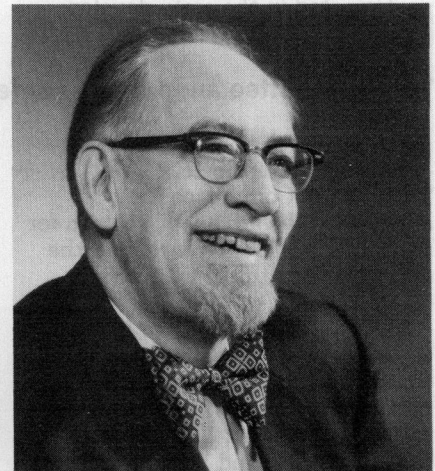


Photo: Fabian Bachrach

J. Presper Eckert (left) and John W. Mauchly, inventors of the first electronic computer, Eniac, will receive the Emanuel R. Piore Award at COMPCON 78 Fall. Eckert is now vice president and scientific advisor to the president of Sperry Univac; Mauchly is a consultant to Univac and head of his own firm, Dynatrend. The award "for achievement in the field of information processing contributing to the advancement of science and the betterment of society" will be presented by C. Lester Hogan, IEEE executive vice president, at the September 6 Plenary Session. Established in 1976 through agreement between IBM and the IEEE Foundation, the award consists of a bronze medal, certificate, \$2000, and a \$2500 international travel grant.

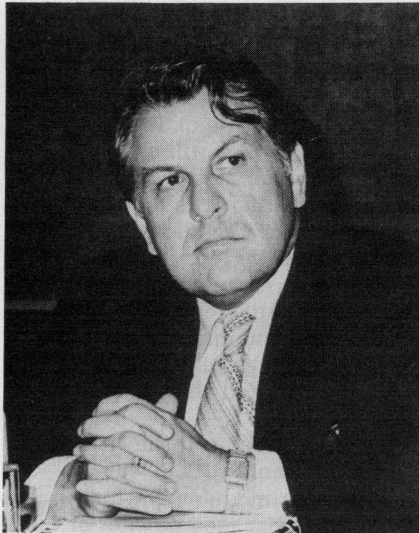
Smith to chair NCC '79

Computer Society President Merlin G. Smith, a research staff member in the Computer Sciences Department of IBM's T. J. Watson Research Center, has been named conference chairman for the 1979 National Computer Conference. The conference will be held June 4-7 in New York City.

Smith, who is currently a member of the AFIPS Board of Directors, served as chairman of the 1975-76 NCC Board. In addition, he has been a contributor to a wide range of workshops and conferences as an organizer, session chairman, and speaker.

The 1979 NCC, according to Smith, will feature a conference program of more than 100 sessions, a record-breaking exhibit program with more than 350 companies occupying 1400 booths, a separate Personal Computing Festival, a series of professional development seminars, featured addresses, plus a wide range of special activities including a number of contests and demonstrations now in the early planning stages. The exhibit program will occupy all four floors of the New York Coliseum. Program sessions will be held in the New York Hilton and Americana Hotels.

Smith, who joined IBM in 1952, participated in the early develop-



Merlin G. Smith, president of the Computer Society, will serve as conference chairman of NCC '79.

ment of electronic computers and was responsible for research and advanced development projects in logic and memory technology. Well known for his pioneering efforts in LSI, Smith is currently doing research on the extension of digital design in very large-scale integration.

A member of ACM and an IEEE Fellow, Smith received his BSEE from the University of Cincinnati in 1952 and his MSEE from Columbia in 1957.

Test committee announces conference program, tutorial schedule

The Computer Society Test Technology Committee has announced the advance program for the 1978 Test Conference, and the schedule for a tutorial on LSI testing.

The Test Conference, to be held October 31 to November 2 at the Cherry Hill Hyatt House, Cherry Hill, New Jersey, will focus on the testing of complex LSI at both the component and board levels. Technical sessions and workshops will examine topics such as micro-processor testing, memory testing, hardware and software test strategies, designing for testability, test system architecture, and quality/reliability testing.

For a copy of the advance program or other information about conference participation and registration, con-

tact Pat Regan, Secretary and Registrar, Test Symposium Committee, PO Box 2340, Cherry Hill, NJ 08034; (609) 983-3100.

The tutorial on LSI testing, which will examine test equipment, micro-processor testing, memory testing, and reliability, will be held at two locations. The first session will be held on October 30, 1978 at the Cherry Hill Hyatt House, immediately preceding the Test Conference. The second session will be held on November 27, 1978, at the San Diego, California, Hilton Hotel, preceding Autotestcon '78. There will be no at-door registration for either session. For further information, contact George Lusczek at (201) 323-2183.

More details will appear in the September issue of *Computer*.

Distributed processing explored at NBS/IEEE symposium

Shirley Radack, NBS

Will information systems in the future be centralized or distributed, maxi or mini, top-down or bottom-up? Keynote speaker Lewis M. Branscomb told more than 500 participants in the 1978 Trends and Applications Symposium that the "answer to all such questions is 'yes'." The annual technical meeting, sponsored by the National Bureau of Standards, the IEEE Computer Society, and the IEEE Washington Section, was held May 18 at NBS, Gaithersburg, Maryland.

The symposium theme, distributed processing, was termed an "important area [with an] exciting future" by Branscomb, vice president and chief scientist for IBM. "Computers will become more useful by being moved closer to people . . . [and] by having their functions distributed," he predicted, adding that "communications facilities will be more heavily used."

Most current applications of distributed processing are elementary, according to Branscomb, with differences in complexity depending upon whether distributed functions are shared. But he expects distributed processing to be used in a more sophisticated way in the future to avoid an excessive growth of "people costs."

Citing the economic trends in data processing, Branscomb said that computer costs are going down faster than communications costs, but that both are going down while people costs go up. However, as a result of the use of distributed processing and other methodologies, people costs (about 35 percent of the approximately \$26 billion annual DP expenditures in the US in 1975), should decline to about 25 percent of total DP expenditures in the 1980's, according to International Data Corporation estimates cited by Branscomb.

In absolute terms, however, there will still be an increase in the number of people employed in data processing, because of the expected continued increase in the total amount of money spent on DP. "So there is . . . no evidence of technological unemployment in the advent of distributed processing," he continued. "What the evidence



Photo courtesy NBS

Dr. Lewis M. Branscomb of IBM presented the keynote address, "Distributed Processing—Potentials, Pitfalls, and Priorities," at a recent symposium held at the National Bureau of Standards.

shows is that as employment grows, the user's capability grows vastly faster as a consequence of the proper use of the mix of technologies."

Rising communications costs in proportion to total data processing costs "certainly is a driving force for innovation in communications services," the keynoter pointed out. Whether such innovation occurs depends heavily on "Government strategy in this regulated area."

Future distributed systems will "be devised to match need" he noted, and "office systems merged with data processing systems" will be challenging future applications. The keynoter also commented that the provision of good digital facilities in communications technology is another important future challenge. He discussed other technical issues that have to be addressed—techniques for distributing data, for finding data, for synchronizing the updating of data, and for communicating practically and economically using data encryption.

Symposium participants heard experts from government, industry, and academic organizations discuss issues related to distributed processing. The day long meeting included five technical sessions devoted to office automation systems, network security techniques, analytical studies of distributed processing systems, network architecture, and network implementations.

Helen M. Wood of the National Bureau of Standards chaired the symposium and Ashok K. Agrawala of the University of Maryland served as program chairman.



Proposed Computer Society Bylaws amendments— Publications Committee

In its June 9th meeting, the Computer Society Governing Board proposed bylaw amendments dealing with the Publications Committee. The proposed changes are contained in the revision to Article VI reproduced below. Members wishing to respond to these proposed changes should forward their comments to Russell Theisen, 2667 Fitzhugh Road, Winter Park, Florida 32792, prior to the September 8th board meeting at COMPCON '78 Fall, at the Capital Hilton, Washington, DC.

Computer Society Bylaws Article VI, Section 8

Section 8: Publications Committee

1) Publications Committee Duties.

The Publications Committee shall formulate the publications policies of the society and monitor their execution, recognizing that one of the primary goals of the society is the dissemination of information in its area of interest through suitable publications.

2) Publications Committee Chairman. The chairman of the Publications Committee shall be a vice-president of the society, and will be known as the vice-president for publications.

3) Senior Editors.

There shall be:

- a) an editor for *Transactions on Computers*,
- b) an editor for *Transactions on Software Engineering*,
- c) an editor for *Transactions on Pattern Analysis and Machine Intelligence*,
- d) a technical editor for *Computer*,
- e) an editor for special publications (those publications not the responsibility of other senior editors or of another Computer Society standing committee.

These individuals shall be known as senior editors of the society and shall report to the vice-president for publications. Additional positions of senior editor may be created by the board.

4) Senior Editor Appointment and Removal.

a) The Publications Committee shall recommend to the president one or more candidates for each senior editor position at various times as required. This shall be done only after consideration of the relevant qualifications of the candidates and consultation with, and concurrence of, the appropriate Technical Interest Council(s). The president, with the advice and consent of the board, shall appoint the senior editors for a definite period not to exceed two years.

b) The president, upon recommendation of the Publications Committee and with the advice and consent of the board may remove a senior editor from office.

5) Senior Editor Duties.

a) The senior editors are responsible for the review, editing, and selection of submissions appropriate to their assigned publication's area. The senior editors may appoint associate editors, guest editors, and other special editors only after discussion of their qualifications with the Publications Committee. The senior editors may delegate specific tasks to these appointed editors. Editors shall appoint and utilize referees as appropriate.

b) The senior editors are ex officio non-voting members of the Publications Committee.