
Reliability Society Newsletter

Editor: Susan Eames
Vol. 29, No. 4, October 1983 (USPS 460-200)

President's Column



Naomi McAfee
President

The Society is pushing dynamically ahead. Membership is growing (we have 5.8% more members now than at this time last year). Committees are actively working and all's well with the world.

New areas of expertise are opening up and we need volunteers to chair committees in the areas of robotics, solar energy, and artificial intelligence. Volunteers are also needed for the Reliability and Maintainability Symposium Management Committee. Anyone interested should contact me.

One of the Adcom members, Mr. Samuel Keene, has been selected for the IBM PhD Resident Study Program and will be taking a two- to three-year leave of absence. Congratulations! Sam has resigned from Adcom and Mr. Philip Eisenberg has been appointed to complete his term.

The Editor's Corner

1984 is the One Hundredth Anniversary of the founding of the American Institute of Electrical Engineers (AIEE). There will be many activities throughout the IEEE Com-

munity to celebrate the grand event. If your chapter is planning any special activities, why not advertise the event in the *RS Newsletter*?

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Reliability Society Newsletter

Chapter Reports

Central New England Council

The Central New England Council (CNEC) Reliability Chapter is planning a very active 1983-1984 year. There are five technical meetings planned between September 1983 and March 1984. There is a Fall Lecture Series on "Software Quality Assurance" to be held on four consecutive Wednesday evenings (October 19, 26, November 2, 9) in the Route 128 area of Massachusetts. The Lecturer is Lou Cohen of Digital Equipment Corporation. The four lectures are:

- Lecturer 1: Quality In General
- Lecture 2: An Approach to Software Quality
- Lecture 3: An Example of Software Quality Control: The Formal Software Inspection
- Lecture 4: How Digital Manages Its Engineering For Quality

On April 26, 1984 there will be the Twenty-Second Annual Spring Seminar. A Call For Papers has been issued on the following broad topic areas: Reliability, Maintainability, Availability, System Safety, Integrated Logistic Support, Life Cycle Cost/Design To Cost, Reliability Warranties, Software Reliability, Human Factors Engineering, Reliability Growth, Testability, Fault Tolerance. For detailed information contact:

Ms. Jane Ferguson
Technical Program
Northrop, Precision Products Division
85 Morse Street
Norwood, MA 02062
Tel: (617) 762-5300

S. Emans

nia, and Dick Eichensier of Hewlett Packard. The talk was an update of a previous talk on the same subject by the same speakers in February 1980 and was very well attended. The material presented by these two large volume users of ICs indicated that the American suppliers have done a tremendous job in closing the Quality/Reliability gap.

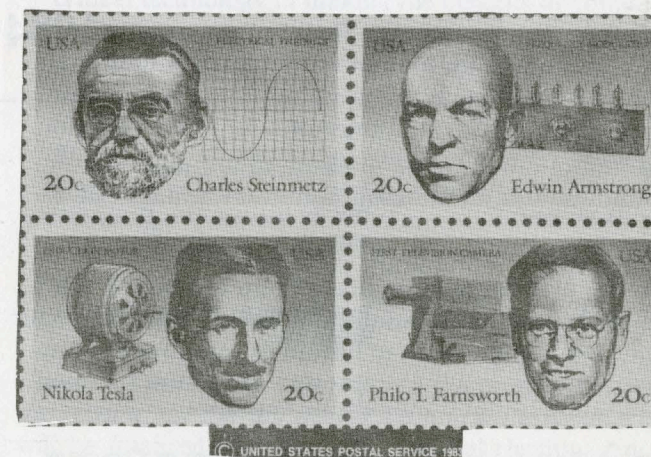
The new officers (1983-1984) of the Santa Clara Valley Reliability Chapter and their company affiliations are:

Chairperson	Phil Johnson	Hewlett Packard
Vice Chairperson	Sonja Hobson	Amdahl Corporation
Treasurer	Rainer Thomos	Hewlett Packard
Society Liaison	Dave Burgess	Hewlett Packard

Santa Clara Valley Reliability Chapter had a successful year and looks forward to another good and interesting year starting in September 1983.

Ajit Goel

Reliability Society Album



BLOCK OF FOUR AMERICAN INVENTORS' STAMPS HONORING ELECTRICAL ENGINEERS AT IEEE CELEBRATION OF PROFESSIONAL ACTIVITIES.

Santa Clara Valley

In April of 1983, the Santa Clara Valley membership attended the IRPS held in Phoenix, Arizona. Several of the Chapter's members played an important part in the organization and selection of papers presented at the symposium. Dave Burgess of Hewlett Packard, Palo Alto, California, was the General Chairman for IRPS and coordinated all arrangements, Technical program committees, finances and publications. Ajit Goel of Zymos Corporation, Sunnyvale, California, was the seminar chairman for Packaging at the symposium. Giorgio Riga of Riga Analytical Lab, Santa Clara, California, chaired the Semiconductor Instabilities section.

In May of 1983 the chapter organized a talk on "current quality of Japanese vs. American ICs." The speakers were Roger Dunn of Xerox Corporation, El Segundo, Califor-

October 1983

1983 Conference and Course Calendar

Date	Conference or Course	Location	More Information
Oct. 16-20	1983 Conference on Electrical Insulation & Dielectric Phenomena	Buck Hill Inn Buck Hill Farms, PA	Prof. Markus Zahn Tel.: (617) 253-4688
Oct. 19-21	The Many Facets of Computer Communications	Atlanta, GA	Lois Thuss Conference Tel.: (301) 953-7100
Oct. 24-26	IEEE 1983 International Symposium on Electromagnetic Compatibility	Shoreham Dunfey Hotel Washington, DC	William G. Duff 5390 Cherokee Ave. Alexandria, VA 22314
Oct. 27-28	Enhancing Engineering Careers by Fulfilling Individual and Organizational Goals	Hyatt Rikeys Palo Alto, CA	Bill Anderson (202) 785-0017
Oct. 31-Nov. 3	International Conference on Computer Design VLSI in Computers	Rye Town Hilton Port Chester, NY	Dr. Harold W. Carter Tel.: (513) 255-3576
Oct. 31-Nov. 3	IEEE/AIAA Digital Avionics Systems Conference	Seattle, WA	Cary R. Spitzer NASA Langley Research Center Tel.: (804) 865-3318
Nov. 8-11	29th Annual Conference on Magnetism and Magnetic Materials	Pittsburgh, PA	Dr. Hugh C. Wolfe American Inst. of Physics 335 East 45th Street New York, NY 10017
Nov. 10-11	ASSP Spectrum Estimation Workshop II	Holiday Inn, Airport Tampa, FL	Professor A. R. Gondeck (813) 974-2581
Dec. 12-14	Total Systems Reliability Symposium	Gaithersburg, MD	Lorraine Duvall (315) 336-2359
Dec. 30-Jan. 7	International Conference on "Cybernetics & Society"	Bombay & New Delhi, India	F. C. Kohli Bombay Tel.: 233052 or (614) 594-5313

1984 Conference and Course Calendar

Date	Conference or Course	Location	More Information
Jan. 23-25, 1984	OFC'84 (Optical Fiber Communication)	Hyatt Regency New Orleans, LA	Optical Society of America (202) 223-8130
Jan. 24-26	1984 Reliability & Maintainability Symposium	St. Francis Hotel San Francisco, CA	K. J. Ravizza (408) 256-1242
Feb. 22-24	1984 IEEE International Solid-State Circuits Conference	San Francisco, CA	Lewis Winner (305) 446-8193
Mar. 19-21	Phoenix Conference on Computers and Communications	Phoenix, AZ	Susan C. Brewer Honeywell, LCPD, M.S./222 P. O. Box 8000F Phoenix, AZ 85066

March 19-21	IEEE 1984 International Conference on Acoustics, Speech, and Signal Processing	Sheraton Harbor Island Hotel San Diego, CA	Prof. Sydney Parker (408) 646-2788
Apr. 3-5	1984 International Reliability Physics Symposium	Caesar's Palace Las Vegas, NV	George Ebel (201) 785-6656
Apr. 24-26	Seventh Topical Meeting on Integrated and Guided-Wave Optics	Orlando Hyatt Hotel Kissimmee, FL	Optical Society of America Integrated Optics Mtg. 1816 Jefferson Pl, NW Washington, DC 20036
Apr. 24-26	IEEE 1984 National Symposium on Electromagnetic Compatibility	Hyatt Regency Hotel San Antonio, TX	William McGinnis (512) 684-5111 Ext. 2721
Apr. 26	Twenty-Second Annual Spring Reliability Seminar	Boston, MA	Gene Bridgers (617) 762-5300 ext. 2286
May 7-10	1984 IEEE International Symposium on Circuits and Systems	Queen Elizabeth Hotel Montreal, Canada	Dr. R. Schaumann (612) 373-2483
June 18-24	Fifteenth Annual Power Electronics Specialists Conference	Gaithersburg, MD	Dr. Donald Bosack (312) 640-4410
Oct. 22-24	1984 International Symposium on Noise and Clutter Rejection in Radars and Imaging Sensors	Tokyo, Japan	Prof. Hisanao Ogura (075) 791-3211 ext. 620

Highlights from the June and July TAB OPCOM Meetings

Ten Division Directors: TAB (Technical Activities Board) OpCom confirmed passage of the TAB mail ballot endorsing Bylaw revisions to increase the number of Division Directors to ten.

"IEEE Software" and "IEEE Design and Test of Computers": The two new IEEE Computer Society magazines were unanimously endorsed. Availability of the magazines to members of all IEEE societies at the Computer Society member rate was endorsed subject to approval by TAB.

IEEE ASSP Magazine: The proposal submitted by the IEEE Acoustics, Speech, and Signal Processing Society for the creation of "IEEE ASSP Magazine," which has been approved by the Publications Board and the TAB Finance Committee, was unanimously endorsed.

IEEE Engineering in Medicine and Biology Society Publication Plan: TAB OpCom recommended TAB approval of the proposal to include only the "IEEE EMB Magazine" with the basic membership fee and make the "IEEE Transactions on Biomedical Engineering" available to members of all IEEE Societies, with a discount to EMB members.

DOD Research in Software Engineering: The following motion was unanimously passed:

"TAB OpCom recognizes that software engineering is a critical technology in making the benefits of computers available on a broad basis. The Department of Defense Research Program in Software is making a major contribution to resolving the issues in this field. The FY84 budget for DoD Research Activities in Software Engineering should be maintained at an appropriately high level in order to continue progress in this important technology."

Division Restructuring: TAB approved the regrouping of the Societies/Councils into ten named technical divisions, as proposed, with the Amendment that the Information Theory Group be moved to the Systems and Control Division. TAB OpCom also approved a proposed numbering scheme for the ten named Technical Divisions which will be finalized after the IEEE general election. An announcement will be made in *The Institute* that members may collect signatures for petition candidates for the two additional Division Director positions.

The following is an editorial submitted by an IEEE RS Member. It is the opinion and comments of the author and not of the Reliability Society or IEEE. If anyone wishes to

have an opposing point of view published, send your views to the *RS Newsletter* Editor (address elsewhere in this issue).

Reliability vs. Design Engineering: Dichotomy or Complement?

The most serious tension existing in an organization involved in system/product design is that between the reliability and design engineering functions.

This tension emerges first of all from the perception by most design engineers of reliability as a performance parameter. To justify this perception, design engineers invoke the reliability definition and its allusion to satisfactory *performance* over time. From this they reason that, since they are responsible for system/product performance, they are *ipso facto* responsible for system/product reliability.

Compounding the design engineer's perception of the reliability function is his perception of himself. Design engineers typically perceive themselves as innovative professionals. As such, they value their affiliation with their profession more than that with their employer organization. Considering their innovative abilities and "profession" orientation, design engineers take considerable pride in their creations and resent what they perceive as unnecessary impositions on their design prerogatives.

As a result, most design engineers consider the reliability organization as redundant and therefore irrelevant. Consequently the reliability organization tends toward isolation from the mainstream of design and development efforts, with reliability engineers relegated in most instances to documenting the decisions made by design engineers and/or the program manager (usually a design engineer himself) without contributive reliability input.

While it is granted that little, if anything, can (or even should) be done to alter the personality and professional values of a typical design engineer, considerable effort can be effectively directed toward altering the perception that most of them maintain regarding the reliability discipline. This involves development, planning, and implementation of the reliability effort, employing a systematic process which emphasizes the strategic aspects of a program from a reliability standpoint.

The initial—and most important—step in the process is the clarification of the respective roles of the reliability engineer and the design engineer. The design engineer must

be reassured of the fact that he is indeed responsible for system/product performance, and that the reliability engineer has no intention of usurping the design engineer's prerogatives in this matter. However, he must be made aware of the fact that reliability is a design attribute, and not a performance parameter.

Performance relates to design as an end relates to the means. Whereas a design engineer is responsible for achievement of the specified performance characteristics (the end, or objective), a reliability engineer is concerned primarily with the functional and physical arrangement of system/product components (the means taken to attain the objective) selected for such performance. By properly addressing these concerns, the reliability engineer ensures that a given design, properly providing the specified performance characteristics, likewise possesses the specified reliability characteristics.

Having clarified the distinction between performance and reliability engineering, the planning process can proceed more effectively and efficiently. The next elements of the process—the objective of the reliability program and the formulation of reliability policy for achievement of the objective—can be stated more decisively, definitively, and comprehensively.

With reliability policy in mind, the critical strategic elements of the process—the establishment of the design engineering-reliability engineering interface and the organizational controls necessary to ensure success of this interface—can be more authoritatively devised.

Thus reliability engineering and design engineering are complementary, not dichotomous. However, the interface is strategic in nature, and should be carefully planned and organized, with assurances of non-intervention into established prerogatives.

William L. Rivers
SWL, Inc.
McLean, VA 22101

The chapter activity period for judging was July 1, 1982 to June 30, 1983. The completed Awards Forms were due in to the Chapter Awards Chairperson on June 17, 1983. The rules for the award were the same as for the previous year. The date for judging was in July 1983, but the date for the presentation is September. (In previous years it had been the following January at the RAM Symposium.) The minimum prize for each chapter that participates is worth \$60.00.

Any information or questions about the Chapter

Awards should be addressed to:

Robert A. Jaquess
925 Cambridge Drive
Ft. Collins, CO 80525
Tel: (303) 482-5811 ext 1441

The Society wishes to express gratitude to Mr. Henry Malec, who has served as the Chapter Awards Chairman for the past several years.

R. A. Jaquess

Guide for Writing Better Papers

Craig Harkins of IBM in San Jose, California, and Don Plung of Exxon Nuclear in Idaho, both members of the IEEE Professional Communication Society, have coauthored a book entitled "A Guide for Writing Better Technical Papers." The book, published by the IEEE Press, contains 48 reprinted articles selected from a variety of sources and grouped in five categories as follows:

- a. Getting Started
- b. The Rhetoric of Papers & Articles
- c. Tricks of the Trade
- d. Some Research Results
- e. Following through

In using this book, potential authors can either focus

their attention on one aspect of writing a paper or article, or they can follow all the recommended steps from planning to polishing. It provides even the most experienced professionals with ideas to help simplify and improve the process of writing technical papers.

Copies of "A Guide for Writing Better Technical Papers" may be obtained by contacting the IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. The paperbound edition is \$12.45 (for IEEE members only), while the clothbound edition is \$18.70 (for IEEE members) and \$24.95 (for nonmembers). The order number is PP01537 for the paperbound edition and PC01529 for the clothbound edition.

Statement by Hans C. Cherney Candidate for Position of President-Elect of IEEE for 1984

Over the last decade, the membership of the Institute has increased by 40%. Our technical activities, our conferences and publications have grown at a similar pace. These changes have brought benefits to many members. At the same time they impose great responsibilities on the IEEE leadership to ensure that the members in fact obtain what they need from a large and complex organization.

In my two years as Regional Director I visited all Sections in the Region using the resources of the Institute to meet the demands of the members. As Vice President of Regional Activities I continued the pattern world-wide of bringing Institute means to bear selectively on Region and Section opportunities and problems. In addition, as a member of the Board of Directors for three years and as a

member of the IEEE Executive Committee I participated in decisions affecting the Institute as a whole and acquired an intimate knowledge of the way the IEEE operates. With the changes in technologies, the demands on our profession are changing at a rapid pace. Quality assurance, productivity and manufacturability have joined R & D as areas of importance in determining the future of our industries and profession. The IEEE must assist its members to grow with these changes, indeed to stay ahead of them.

As President I would use my extensive experience as a volunteer IEEE leader to make the Institute responsive to the members' interests and needs whether these concern our technical societies, geographical entities or professional activities.

Professional Engineers Exam?

For a number of years there has been much discussion and debate within the engineering community and the IEEE concerning the efficacy of examinations as a means of determining competency to be licensed to practice a given engineering discipline. The National Council of Engineering Examiners (NCEE), a body composed of representatives of each State Board of Engineering Examiners, has been able to forge agreement among the various states to standardize one common examination to the point that 48 out of the 50 states now utilize the uniform examination.

Historically, the IEEE's involvement with the NCEE was minimal until the mid-1970's, at which time the United States Activities Board (USAB) Registration Task Force began to look at the question of the adequacy of the examination to the practice of the disciplines encompassed within the electrical engineering profession.

The area of question adequacy has been reviewed by the NCEE with the cooperation of our task force and at minimum two basic areas needing improvement have been identified:

- a. The orientation of a majority of writers of questions is basically academic, resulting in textbook-type questions which have little relevancy to the real work world an engineer must deal with; and

- b. The level and type of question lag the state-of-the-practicing-art of Electrical Engineering by five to ten years.

You can play a part in providing the leadership and the capability to make the Professional Engineering Examinations more relevant to the practice of modern engineering by providing examinations that properly test for competency to practice.

The IEEE is in the process of establishing a system that will provide a continuing source of examination questions to the NCEE for their use in examining electrical/electronics engineers requesting licensing under the various jurisdictions. The Task Force currently estimates that it will take at least 60 writers, each writing one question per year to supply NCEE's needs and build up a reserve of unused questions.

Also, if you're interested in developing questions for the examination, please write to: Joel Snyder, PE, Co-Task Force Leader, IEEE/USAB Licensure & Registration Task Force, c/o IEEE Washington Office, 1111 19th Street, NW, Washington, DC 20036 (or call (202) 785-0017 and request the Question Writer's PE Packet). The NCEE pays an honorarium for each question it accepts.

Technically-Write II

Technically-Write II is a practical home-study course designed to help scientific and engineering professionals master the communication techniques essential to career advancement. Organized, written, and successfully tested by experts in the communication field, the course teaches step-by-step methods for communicating technical and business information clearly, efficiently, and persuasively.

This course will allow participants to apply the associated principles immediately in the various communication tasks that engineers face daily, i.e., field reports, inspection reports, formal reports, technical correspondence, technical descriptions and instructions, technical presentations, briefings and proposals, and resumes and letters of application. Each student is assigned to an instructor who is a communication specialist. This personalized instruction is supplemented with practice assignments for various situations and expert criticism to ensure development of effective communication skills.

The course covers eleven broad topic areas. For each topic, the student is required to read sections of the textbook, do specific exercises, and submit written assignments by mail to the instructor for evaluation. The assignments are based on real-life engineering situations. The

dialogue that develops between student and instructor is a unique benefit of this course.

The *Technically-Write II* course was designed by Ronald S. Blicq, educator and Chairman of the Education Committee of IEEE's Professional Communication Society. It is approved by the IEEE Educational Activities Board as a worthy home-study course for IEEE members who would like to improve their communication skills. Completion of the course takes about 15 weeks. Students who successfully fulfill all course requirements receive a Certificate of Completion and 6.0 CEAs. The price of this course is \$127.00 for members and \$177.00 for nonmembers. It may be ordered from IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. If dissatisfied with the course, all items may be returned within 2 weeks after receipt for full refund of the enrollment fee.

IEEE members who are not members of the Professional Communication Society will receive membership in PCS at no additional cost when they enroll in *Technically-Write II*. Nonmembers of the IEEE (upon payment of the \$10.00 entrance fee and submission of membership application) will be credited with current IEEE dues and the PCS fee.

Professional Communication Society Offers Special Transactions Issues

Copies of the following four topical issues of the *IEEE Transactions on Professional Communication* are currently available:

-Interpreting Technology for the Nonspecialist, PC-25/4, December 1982;

-Making Information More Usable Through Graphics, PC-25/2, June 1982;

-Making Information Usable, PC-24/6, March 1981;

-Public Speaking for Engineers and Scientists, PC-23/1, March 1980.

Copies of these special issues are available from R. J. Joenk, Editor, IBM Corporation; Boulder, CO 80302. The price is \$5.00 per copy in any quantity, and checks should be made payable to the IEEE Professional Communication Society.

Reliability Engineering Center Indian Institute of Technology Kharagpur

A Center for training and research was started in the IITs in India July 1, 1983, with full financial support from the Ministry of Education, Government of India.

One of the broad objectives of the center is to develop a strong base for research and training in the country. The center is offering a one and a half year Masters degree program in the area of Reliability Engineering. This program is open to eleven qualified practicing engineers in any branch of engineering. This postgraduate course is attracting the attention of engineers from other countries as well.

The other major objective of the center is to provide consultancy to private and public sector industries and Government organizations and to develop a close liaison with them for joint ventures in Reliability studies.

For further details on the postgraduate course and/or services offered by the center, please contact:

Prof. K. B. Misra, Ph.D.

Head, Reliability Engineering Centre

Indian Institute of Technology

Kharagpur - 721 302, W. B., India

American Inventors' Stamps Honoring Electrical Engineers Unveiled

A design of a block of four American inventors' stamps honoring electrical engineers was unveiled in Denver, Colorado on June 9, 1983 by the U.S. Postal Service during Board meetings of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). The block of stamps honors Edwin Armstrong, Philo T. Farnsworth, Charles Steinmetz, and Nikola Tesla—all distinguished electrical engineers. The stamps were presented during a celebration of the first 10 years of IEEE professional activities by the Institute's United States Activities Board. IEEE is also preparing to celebrate its centennial next year, marking 100 years of progress in electrotechnology.

Edwin Armstrong, one of the four engineers pictured on

the stamps, developed FM radio, announced in a meeting of the Institute of Radio Engineers (IRE), a predecessor organization of IEEE. *Philo T. Farnsworth* developed an early television camera. *Charles Steinmetz* applied advanced mathematics to electrical engineering, and was a president of the American Institute of Electrical Engineers (AIEE), a second predecessor organization of IEEE. *Nikola Tesla* was the inventor of the induction motor and a proponent of alternating current electrical systems.

The block of four 20-cent stamps recognizes the contributions of individuals to electrical engineering progress. IEEE President James B. Owens joined U.S. Postal Service R&D Laboratories Executive Director Walter T.

Marable in unveiling the design. The stamps were formally issued on September 21, 1983, at the Inventors Hall of Fame in Arlington, VA.

The IEEE, formed in 1963 with the merger of AIEE and IRE, is the world's largest technical professional organiza-

tion having some 234,000 members in more than 120 countries. The United States Activities Board is the focal point of the Institute's U.S. professional activities in Washington, DC.

'USAB Decennium' Recognizes First 10 Years of U. S. IEEE Professional Activities

Denver, CO, June 9: The first ten years of U.S. IEEE professional activities was celebrated in Denver, Colorado, on June 9, 1983 by The Institute of Electrical and Electronics Engineers, Inc. (IEEE) United States Activities Board (USAB). The "USAB Decennium" recognizes the implementation of a change in the IEEE Constitution in 1973, adding professional objectives to the previous scientific and educational purposes of the Institute.

Almost 87 percent of IEEE members voting in 1972 supported "the advancement of the standing of the members of the profession...; means to this end include but are not limited to, the conduct and publication of surveys and reports on matters of professional concern to the members..., collaboration with public bodies and with other societies for the benefit of the engineering profession as a whole, and the establishment of standards of qualification and ethical conduct."

Included in this 10-year period, the USAB has: (1) initiated the IEEE Congressional Fellows Program; (2) achieved widespread pension reform; (3) testified actively before Congress; (4) held five U.S. Technology Policy Conferences; (5) identified nuclear reliability issues with the IEEE

Technical Activities Board; (6) cooperated with the Nuclear Regulatory Commission on an "Advanced Electrotechnology" conference; (7) convened on "Engineering Manpower Supply & Demand Conference" as well as published an *Employment Assistance Guide*; (8) met with the Presidential Science Adviser on numerous occasions; (9) completed slide shows on "Energy in Perspective" as well as "Age Discrimination;" and (10) held Capitol Hill briefings on photovoltaics and robotics.

Copies of a history of the first 10 years of U.S. IEEE professional activities are available free-of-charge through IEEE Public Information in Washington, DC, telephone (202) 785-0017.

During this period, the USAB and the United States Activities Committee, its predecessor, have been led by: Harold S. Goldberg (1973, 1975); Leo Young (1974); James H. Mulligan, Jr. (1976); John J. Guarrera (1977); Bruno O. Weinschel (1978-79); Richard J. Gowen (1980-81); and Edward J. Doyle (1982-83). The chairmen were recognized at the Denver celebration by Richard J. Backe, an early volunteer in the professional area, and chairman of the USAB Decennium.

Ad Hoc Committee on Super Scientific Computers States Mission

Washington, DC—A new Institute of Electrical and Electronics Engineers, Inc. (IEEE) United States Activities Board (USAB) group, the Ad Hoc Committee on Super Scientific Computers, planned to issue a preliminary report this August on whether U.S. Government initiatives are required for maintaining the U.S. lead in the development of super-speed scientific computers. The U.S. has always led the world in developing and producing "supercomputers," according to Dr. Sidney Fernbach, an IEEE member and theoretical physicist, who is the committee chairman. At recent meetings, the IEEE/USAB group has received presentations from supporters, developers, and users of supercomputers. Dr. Fernbach describes the committee's mission to: (1) inform IEEE membership of

Japanese and U.S. plans to develop advanced computers; (2) establish liaison with the National Science Foundation (NSF), the Commerce, Energy, and Defense Departments, as well as other Federal agencies having an interest in Japanese attempts to gain a lead in supercomputers; (3) assess U.S. research and development efforts determining if Government support is necessary; and (4) issue recommendations to the membership and Government agencies as appropriate. Among the options for government action being considered by the committee are: a guarantee to purchase U.S. supercomputers if developed; some form of tax credit to offset research costs; and direct development contracts negotiated with U.S. industry.

Current U.S. supercomputers include the Cray-1 and

Cyber 205 employed in weather prediction, nuclear research, and seismic studies. IEEE's Fernbach notes that the Japanese Ministry of International Trade and Industry (MITI), a government/industry partnership, is investing millions of dollars to establish a Japanese lead in supercomputers. Hitachi and Fujitsu are in the process of producing mainframes more powerful than the current U.S. versions by the end of this year, he adds.

Members of the IEEE Ad Hoc Committee on Super Scientific Computers, chosen by Dr. Fernbach, are: Dr. Alfred E. Brenner, Fermi Laboratories; Dr. James C. Browne, University of Texas; Mr. Harvey G. Cragon,

Texas Instruments; Dr. James F. Decker, Energy Department; Dr. Tse-yun Feng, Ohio State University; Mr. Sol Glasner, Sperry Corp.; Dr. Frank Kuo, SRI International; Dr. Lawrence Lee, NSF; Dr. Jack Lubowsky, IEEE Congressional Fellow in the Office of Senator John Glenn; Maj. Carl Edward Oliver, Bolling Air Force Base; Dr. Jesse Poore, House Committee on Science and Technology; Dr. John P. Riganati, National Bureau of Standards; Mr. Doyce Satterfield, IEEE Congressional Fellow in the Office of Senator Howell Heflin; Dr. Paul B. Schneck, NASA/Goddard; Dr. Daniel Slotnick, University of Illinois; and Mr. Hugh Walsh, IBM Corp.

IEEE Spectrum Receives National Magazine Award for Special Issue on "Technology in War and Peace"

IEEE Magazine Cited for Overview on World's Weaponry and Where It Is Taking Mankind

New York, NY, May 24: *IEEE Spectrum* has received the 1983 National Magazine Award for outstanding achievement in a single-topic issue for its special coverage of "Technology in War and Peace." The award-winning feature issue, published last October by The Institute of Electrical and Electronics Engineers, Inc. (IEEE), was cited for its analysis of "...the question of our time" and for its "...objective report on the world's weaponry and where it is taking mankind." The award was presented to Donald Christiansen, *IEEE Spectrum's* Editor and Publisher, by Osborn Elliott, Dean of the Columbia Graduate School of Journalism, at a recent luncheon here at the Waldorf-Astoria.

The National Magazine Award was established in 1965 by the American Society of Magazine Editors and is administered by the Columbia Graduate School of Journalism, which also administers the Pulitzer Prize awards for newspaper journalism.

The annual ceremony honors publications in eleven separate categories, and awards issued are considered the

magazine industry's highest honors.

Finalists in the category of single-topic issue, in addition to *IEEE Spectrum*, were *American Photographer*, *Ebony*, *Money* and *New York*. Additional contenders included *Scientific American*, *Business Week*, *Time*, *Life*, *Esquire*, and *Progressive Architecture*.

In awarding the single-topic national prize to *IEEE Spectrum*, the judges issued the following citation:

"This single-topic issue of *Spectrum* magazine, devoted to the state of our technology in war and peace, addresses itself to the question of our time. It is an analysis of current and future developments that the layman needs to judge where we are in the expensive contest for survival. It is a clear, informed and objective report on the world's weaponry and where it is taking mankind. The editors are to be complimented on a thorough and understandable analysis of a complex but all important undertaking."

This year's competition marks the fourth time that *IEEE Spectrum* has been a finalist for a National Magazine Award. *Spectrum* previously won top honors in 1980 for "Specialized Journalism" for its in-depth coverage of "Three Mile Island: the future of nuclear power."

1983 IEEE Membership Directory Now Available

New York, NY, May 13: The *1983 IEEE Membership Directory* has just been published by The Institute of Electrical and Electronics Engineers, Inc.

Containing 1,500 pages, the paperbound *1983 IEEE Membership Directory* provides quick access to the name, current location and title of over 200,000 IEEE members and affiliates (student members are not included). Listings

include telephone numbers, when authorized.

Mobility within the fields of electrical/electronics/computer science and engineering is large, in the IEEE's case amounting to a 50% change in member addresses over the course of an average 18-month span. It is for this reason that the Directory is published on an annual basis.

In addition to the roster, the Directory contains listings

of over 3,500 IEEE Fellows, including their citations and other awards; winners of 24 major IEEE Awards for outstanding achievement in science and technology, from their inception; IEEE past presidents and directors. Included, also, is a section on the purposes, organization and history of the IEEE and requirements for the attainment of various membership grades.

The *1983 IEEE Membership Directory* (JH60780) is priced at \$30.00 for IEEE members and \$75.00 for non-members. The Directory may be ordered from the IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. Check should be made payable to IEEE. A \$2.00 billing charge is added to all non-prepaid orders.

Advanced Microprocessors Featured in New IEEE Press Volume

The publication of *Advanced Microprocessors, a Book of Selected Reprints*, has been announced by the IEEE PRESS. This volume, sponsored by the IEEE Computer Society, was edited by Amar Gupta and Hoo-min D. Toong of the Massachusetts Institute of Technology.

In less than 12 years, we have seen four generations of microprocessors—a growth rate three times faster than in the case of computers. Before the year 2000 the number of microprocessors in use will exceed the population of people living on Earth.

Because of this incredible pace, a comprehensive analysis of the field has yet to be written. The information published by chip manufacturers focuses on the highlights of their products. Designers find it difficult to meaningfully compare and contrast products of different manufacturers.

This reprint book fills a void in the literature by present-

ing a history of the field of microprocessors as well as a comprehensive picture of current trends. In keeping with the great interest in and increasing usage of the newer chips, the 41 reprinted papers concentrate on 16-bit and 32-bit microprocessors. The reprints are organized into six parts, as follows: Overview, 16-bit Microprocessors, 32-bit Microprocessors, Performance Evaluation, Related Technologies, and Systems Issues.

This book provides an ideal opportunity for readers to bring themselves abreast of the latest trends of microprocessor design and applications.

Advanced Microprocessors is a 368-page clothbound volume priced at \$41.50. Under a new IEEE PRESS policy, IEEE members can buy this book for \$24.90, a 40% discount. It can be ordered postpaid from the IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854.

RS Newsletter Inputs

All *RS Newsletter* Inputs should be sent to the Editor, Susan Eames, 2 Linda Street, Westborough, MA 01581 per the following schedule:

- For October Newsletter: by July 15
- For January Newsletter: by October 15
- For April Newsletter: by January 15
- For July Newsletter: by April 15