
Reliability Society Newsletter

Editors: Gary Kushner and Mark Snyder
Vol. 30, No. 4, October 1984

Editors' Message

Well, our first issue of the Reliability Newsletter has been published. What did you think? Yes, we really want to know. It certainly didn't take a critical eye to notice some flaws here and there with our first copy. We apologize for the misordered pages and, as we continue down the learning curve, the product will improve accordingly.

As for the content of the Newsletter, there is clearly more latitude for material than has been traditionally exploited. This publication is for the benefit of the Reliability Society members and in that spirit, we want the members to influence what is published. There is considerable room to diversify. We need your ideas and suggestions. We also need your inputs for publication. Among some opportunities:

- More extensive chapter news
- Kudos, awards, promotions, etc.

- Opinions
- Letters to the editor
- Obituaries
- Local conferences
- Related news items
- Breakthroughs
- Newsletter critiques

Let's hear from you. We want this Newsletter to be as interactive as possible and to best serve the interests of the Society. Don't be bashful.

Gary Kushner
Mark Snyder

RS Newsletter Inputs

All RS Newsletter inputs should be sent to one of the associate editors, Gary Kushner, 499 Brigham St., Marlboro, MA 01752 or Mark Snyder, Digital Equipment Corp, 14 Walkup Drive, (YWO/G13), Westboro, MA 01581 per the following schedule:

For January Newsletter	by Oct 15
For April Newsletter	by Jan 15
For July Newsletter	by Apr 15
For October Newsletter	by Jul 15

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Associate Editors: Gary Kushner
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IEEE RS Newsletter
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37 Diana Dr., Marlboro, MA 01752

What is AdCom?

In the previous issue of the RS Newsletter, a list of the AdCom membership was published. We thought it would be useful to reprint the following brief description of the AdCom:

The AdCom is the Advisory Committee of the Reliability Society. This committee of eighteen members manages the society by the guidelines stated in the Constitution and Bylaws. These eighteen members serve three years each on a rotational basis. Every year one-third (or six) members' offices come up for re-election. (Only two consecutive terms are allowed and the AdCom member must sit out for a

term). Once the entire AdCom is elected, these eighteen members in turn elect the President of the Society, and four Vice Presidents for a term of one year each.

The entire AdCom holds three meetings during the year. The first meeting is held in conjunction with the RAM Symposium in January, the second in conjunction with the Reliability Physics Symposium in April, and the third in the Fall (Chapter Chairman's Meeting). At these meetings various issues are discussed. Each Vice President presents his/her report. These are published in the Newsletter under AdCom Vice President Reports.

Correction

On page 14, of the previous Newsletter, Technical Operations Vice President's Report, the firm of James J. Rooney and David J. Campbell was spelled incorrectly. The correct spelling is JBF Associates, Inc.

Chapter News

Central New England Council

The Central New England Council is planning an exciting array of events for the upcoming year. These events will include an All-Day Seminar, a Fall Lecture Series, and five monthly meetings.

Our first meeting of the new season was held on Wednesday, September 19, 1984. The talk was presented by Mr. Gene Bridgers and was entitled 'Reliability-A Key to Achieving Product Success and Strength.'

During the months of October and November we will hold a four-week lecture series on new developments in components (IC'S) which will include a tour of a semiconductor manufacturing facility.

Gary Kushner
Chairman

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The 1984-1985 Chapter officers will be as follows:

Chariman: Ruth G. Smith
4852 Ten Oaks Rd.
Dayton, MD 21036
(VITRO Corporation)

Executive Vice Chairman: W. L. (Larry) Shapleigh
3723 Randolph St.
Fairfax, VA 22030
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STEMCO Suite 525
2341 Jefferson Davis
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Arlington, VA 22202

Secretary: William R. (Ray) Schaffer
10820 Scott Dr.
Fairfax, VA 22030

The nomination and election of these officers were conducted in accordance with Chapter Bylaws.

IEEE Centennial Medals

The following is a list of Reliability Society members who were awarded IEEE Centennial Medals. Please join us in congratulating them on this achievement.

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Inst De Recherche/Hydro—Que
P.O. 1000
Varenes, Que., Canada

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18 Melrose Ave.
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1985 Annual Reliability and Maintainability Symposium

The 1985 Annual Reliability and Maintainability Symposium (RAMS) will be held at the Franklin Plaza Hotel, Philadelphia, PA, January 22, 23 and 24, 1985. This Symposium is sponsored by the following engineering societies: (ASME) American Society of Mechanical Engineers, (ASQC) American Society of Quality Control (Electronic and Reliability Division), (IIE) Institute of Industrial Engineers, (IEEE) Institute of Electrical and Electronics Engineers, (SOLE) Society of Logistic Engineers, (IES) Institute of Environmental Sciences, (AIAA) American Institute of Aeronautics and Astronautics, SSS and (SRE) Society of Reliability Engineers.

The purpose of the symposium is to present and exchange data and information between government and industry in the fields of reliability, maintainability, safety, logistics, human factors and related assurance disciplines.

During the three days, parallel sessions will cover the following topics: Influencing the Front End, Reliability Improvement Techniques, RADC System R&M Program, Statistical Applications in R&M Development, R&M Economic Factors, Mechanical Reliability, Computer-Aided R&M, Reliability Testing and Screening Processes, Maintenance Planning and Field Data Analysis, Product Reliability Growth Processes, Measures of Customer Satisfaction, Integrated Diagnostics, R&M Education and Training, Software Reliability, Modern R&M Management, Methodologies and Simulation, Maintainability, R&M

Modeling, and Operational Readiness and Availability.

Special events at the Symposium will include two panel sessions and an exhibits program, displaying modern equipment and items of interest to the R&M professional. The first panel on International R&M Standards will discuss the existing and proposed standards, designed to satisfy the needs of international customers. The panelists will be members of the International Electrotechnical Commission (R&M Technical Committee). The second panel on Civil Aircraft System Safety will explore the impact of Federal Aviation regulations on the design, R&M, and maintenance of civil aircraft. The panelists will be aircraft systems professionals from industry and government regulatory agencies.

The Symposium also sponsors tutorial sessions for neophytes and as refreshers for practitioners of assurance technologies. The first tutorial will be held Monday afternoon, January 21, 1985 on Thermal Design for Reliable Equipment. Tuesday's tutorials, January 22, 1985, are: Basic Reliability, Statistical Concepts for R&M and Statistical Design of Experiments. Wednesday's tutorials, January 23, 1985 are: Basic Maintainability and Basic Testability. Thursday's tutorials, January 24, 1985, are: Design to Cost/Life Cycle Cost, Reliability of Repairable Systems and Software Reliability.

For more information write to: Dr. W. T. Weir, Evaluation Associates, Inc. GSB Building, 1 Belmont Avenue, Bala Cynwyd, PA 19004; telephone 215-667-3761.

Call For Papers

1985 International Reliability Physics Symposium

**March 26-28, 1985 • Sheraton-Twin Towers
Orlando, Florida**

The twenty-third Annual Symposium, cosponsored by the IEEE Reliability and Electron Devices Societies, emphasizes device reliability as the dominating influence in the development of new VLSI technologies and circuit designs. With the awareness that today high reliability is the norm for VLSI, the 1985 Symposium will emphasize the role of design, processing, packaging and testing for building-in high reliability. Papers are especially solicited in this area; however, work in all areas of reliability physics will be included in the program.

Papers should deal with work on:

- Physics of Failure Mechanisms—Quantitative models and mechanisms of component failure.
- Failure Analysis Techniques—Advanced or simplified, as they are applied to specific problems.
- Accelerated Testing and Screening—Emphasizing the physical mechanisms which validate testing and screening techniques.
- Design and Process Control for Reliability—Relating specific design concepts and process controls to part reliability.

In the following or related areas:

- VLSI (Microprocessors, Memory, PLA, Redundancy, etc.)—MOS, Bipolar, CMOS, I²L, SOS
- Semiconductor/Insulator Interfaces, Contacts and Metallization
- Packaging, Bonding, Die attach, Coatings and Encapsulation
- Hybrids (Materials, Processes and Components)
- Displays, Sensors, and Solar Cells
- Microwave, Optoelectronic, and SAW Devices
- GaAs Devices and Interface Effects on III-V Devices
- New Devices and Technologies
- Passive Components
- Attachment of Leadless Ceramic Chip Carriers

A special one-on-one session is also planned for significant papers on very specialized subjects and papers with high mathematical content. In this session, authors will display significant data, equations and a summary of their work on posters or other suitable format and be available during the entire session to discuss their work.

The deadline for submission of abstracts is October 10, 1984. Prospective authors are requested to notify the Technical Program Chairman before September 10, 1984 of their intention to submit an abstract and the topics to be discussed. Authors must submit a 50-word descriptive abstract and a 300-500 word summary appropriate to

describe a 20-minute paper or a poster presentation with 10 placards.

Both the abstract and summary must clearly state: (1) the purpose of the work, (2) how it advances the knowledge of reliability physics, and (3) the results of the investigation. The 50-word abstract, suitable for publication in the advance program, should be typed on a separate sheet, and include the title of the talk, name and affiliation of the author(s), complete return address, and telephone number. A two-page, camera-ready summary must also be submitted in a single-sided, single-spaced typewritten format on 8-1/2" x 11" paper, suitable for immediate reproduction, review, and publication. No photographs are permitted, due to printing restrictions; however, appropriate figures and line drawings are acceptable within the two-page total length restriction. The title, name and affiliation of authors, complete return address, and telephone number should appear on the first page, and the paper title and author's name on the second page. Forward abstracts and summaries to:

David S. Yaney, Technical Program Chairman
1985 International Reliability Physics Symposium
AT&T Bell Labs
555 Union Blvd.
Allentown, PA 18103
(215) 439-6118

A limited number of late news papers reflecting important new developments will be considered on a space available basis.

Criteria used by the Program Committee to select papers for the symposium are:

- The work must be new and previously unpublished.
- Evidence of the quantitative results and analytical models of studied phenomena must be given in the abstract.
- The purpose and results of the work and how it advances the state of the art must be clearly described.

Authors of accepted papers will be required to submit their slides and paper manuscripts for review by their session chairman before February 20, 1985. Visual aid legibility is mandatory. Only horizontal format 35 mm slides will be permitted. Papers will not be approved for presentation if the slide quality is unacceptable. Final versions of manuscripts for all papers must be submitted at the symposium for inclusion in the proceedings.

For general conference information contact:

John W. Peeples, General Chairman
1985 International Reliability Physics Symposium
NCR Corporation
3325 Platt Springs Rd.
West Columbia, SC 29210
(803) 796-9250

Product Assurance Forum '84

The US Army Armament, Munitions and Chemical Command, Product Assurance Directorate, the American Society for Quality Control, North Jersey Section, and the Society of Manufacturing Engineers, North Jersey Chapter, will cosponsor the Product Assurance Forum '84 on December 4 and 5, 1984 at the Armament Research and Development Center, Picatinny Arsenal, Dover, New Jersey.

The Forum takes a fresh look at the issues facing today's management in terms of: profit-squeeze, producibility, pro-

cess controls, resource management, timeliness of quality, warranties, and contractor-vendor relationships.

The program will interest corporate executives, operating managers, and project managers in industry and government.

The annual Forum represents a broad-based program of presentations and panels designed to impact Profits and Producibility with Pride (p³).

Conference and Course Calendar

DATE	CONFERENCE OR COURSE	LOCATION	MORE INFORMATION
Oct. 16-18	1984 International Symposium on Electromagnetic Compatibility	Hotel Pacific, Tokyo	EMC '84 Tokyo C/O Prof Takagi 0222-22-1800 X4266
Oct. 21-24	1984 Conference on Electrical Insulation and Dielectric Phenomena	Wilmington Hilton Clayton, DE	Steve Boggs 416-231-4111 X6735
Oct. 22-24	1984 International Symposium on Noise and Clutter Rejection in Radars and Imaging Sensors	Tokyo, Japan	Prof. Hisano Ogura (075) 791-3211 X620
Oct. 22-26	Fifth Intern. Conf. of the the Israel Society for Quality Assurance	Herzlia, Israel	Conference Secretariat c/o Ortra Lts 431 Namir Sq. (Atlarim) PO Box 3473 61-033 Telex 361142
Nov. 5-7	Autotestcon '84	Washington, DC	J. A. Houston (301) 628-3620
Nov. 27-30	13th Annual Conf. on Magnetism and Magnetic Materials	Town and Country Hotel San Diego, CA	Dr. John T. Scott American Inst of Physics 335 East 45th St New York NY 10017
Dec. 4-5	Product Assurance Forum '84	Dover, NJ	see article
Dec. 9-12	1984 IEEE Inter. Election Devices Meeting	San Francisco Hilton and Towers, San Francisco CA	Melissa Widerkehr Courtesy Assoc. 655 15th Street N.W. Suite 300 Washington, DC Telex 440487 COURTESY
Dec. 17-20	National Conf. on Quality and Reliability	Bombay, India	Prof. M. N. Gopalan Indian Inst. of Tech. Bombay, India

1985

Mar. 26-28	1985 Intern. Reliability Physics Symposium	Sheraton Twin Towers Orlando, FL	John Peebles NCR Corp. 3325 Platt Springs Rd. West Columbia, SC 29210 (803) 796-9250
Apr. 9-12	12th Annual Reliability, Availability and Maintainability Conf.	Hilton Hotel Baltimore, MD	Payson Sierer Jr. Baltimore Gas and Electric (301) 787-5150
May 20-22	Electronic Components Conference	Capital Hilton Hotel Washington, DC	Electronic Industries Assoc. 2001 Eye St. N.W. Washington, DC
June 23-26	Intern. Conference on Communications	Palmer House, Chicago, IL	Elmer Schererman (312) 681-7341
July 1-3	International Workshop on Timed Petri Nets	Torino, Italy	Prof. M. A. Marsan Dipartimento di Elettronica, Politecnico di Torino Corso Duca degli Abruzzi, 2 10129 Torino, Italy
August 26-30	Relectronic '85	Budapest, Hungary	Scientific Society for Telecommunication Organizing Committee of Relectronic '85 H-1372 Budapest PO Box 451 Hungary 531-027
Oct. 8-10	Melecon '85	Madrid, Spain	Prof. A. Luque Instituto de Energia Solar E.T.S.I. Telecomun. upm Ciudad-Univer Madrid-3, Spain

Maintainability Matters

IDA/OSD R&M Study

As a result of the 1981 Defense Science Board Summer Study on Operational Readiness, Task Order T-2-126 was issued to conduct a study with the following objective:

"Identify and provide support for high payoff actions which the DoD can take to improve the military system design, development and support process so as to provide quantum improvement in R&M readiness through

innovative uses of advancing technology and program structure."

To accomplish the technology studies, sixteen working groups were formed. They conducted their efforts during the period from July 1982 to August 1983. The following table identifies the working groups and the Institute for Defense analysis (IDA) and Defense Technical Information Center (DTIC) report numbers for available final reports.

Working Group/Chairman	IDA Report Number	DTIC Report Number
Artificial Intelligence Applications to Maintenance/Coppola, A.	D-28	AD-A137 329
Cabling & Connectors/Bird, J. W.	D-29	AD-A137 330
CAD/CAM/Osborne, J. D.	D-30	AD-A137 761
Structural Composites/Crossman, F.	D-31	AD-A137 331
Directed Energy/Mayo, B. R.	D-32	AD-A137 332
Fiber Optics/Glista, A. S., Jr; Katz, R. S.	D-33	AD-A137 333
Integrated Systems of Manufacture/Bosworth, J.	D-34	Ad-A140 304

Manpower, Personnel, & Training/Watson, P. A.; Hebenstreit, W.	D-35	AD-A137 334
Mechanical Systems Condition Monitoring/Howard, P.	D-36	AD-A137 524
Nondestructive Evaluation/Mayer, G.	D-37	AD-A139 484
Operational Software/Druffel, L. E.	D-38	AD-A137 335
Electronic Packaging & Interconnect/Clark, R. J.	D-39	AD-A137 336
Power Supply/Hornbeck, D.	D-40	AD-A137 525
Testing/Neumann, G. W.	AD-41	AD-A137 526
VHSIC/Maynard, E.	D-42	AD-A137 720
Diagnostics/Nunn, M.	—	—

Avionics Maintenance Conference 1984

The Avionics Maintenance Conference is an air transport industry activity serving the needs of the industry in matters of avionics maintenance. Its objectives are promotion of improved avionics systems, equipment reliability and performance. It is the medium for the exchange of information among users, repair facilities, installers, suppliers, manufacturers, and designers of avionic systems and components, as a professional approach to maintainability and maintenance practices.

The Avionics Maintenance Conference (AMC) 1984 was held April 3-5, 1984 at the Red Lion Sea/Tac Hotel, Seattle, Washington. The total attendance of 526 was a record, eclipsing the previous 502 in Vancouver. There were 63 airlines and 108 manufacturers in attendance. Also represented were 5 airframe manufacturers, 2 service agencies, and 2 regulatory agencies. This broad level of participation tends to confirm the increased emphasis being placed on industry

activities as a valuable tool in the war against higher maintenance costs.

The principal areas of open forum discussion were: Communications Systems; Autopilot & Flight Controls; Resources; Product Support and Miscellaneous Systems; Engine Indication; Aircraft Fuel; Flight Instruments and Navigation Systems; and Electric Power and Lighting.

The three AMC Task Groups scheduled meetings on April 2, immediately prior to the Open Forum. This provided attendees with an opportunity to be briefed on work programs conducted throughout the year. The AMC Task Groups are: TG 103—Digital Testing, TG 104—Reliability Reporting, and TG 110—BITE.

The AMC "Report" (issued May 25, 1984) summarizes the task group reports and the open forum discussions. A limited number of reports are available through Mr. Larry Carpenter, Executive Secretary—AMC, Aeronautical Radio, Inc., 2551 Riva Road, Annapolis MD 21401.

Publications of Interest

InterRam Proceedings

Once again, the Reliability Society offers its members a chance to receive a gratis copy of the Inter-RAM conference proceedings. The 11th Inter-RAM was held in Las Vegas, NV in April and the Proceedings are now available to our members. The Conference, with this year's theme "Managing for Reliability," services the power industry, both fossil and nuclear fueled.

Members interested in obtaining a copy should send their

requests to

Alan O. Plait, VP Meetings
5402 Yorkshire Street
Kings Park
Springfield, VA 22151

no later than November 30.

The copies will be mailed.

Testability FOM Report

The Rome Air Development Center (RADC) has released a technical report describing a technique for computing a testability figure of merit for an electronic system. The report, RADC-TR-83-291 "Advanced Application of the Printed Circuit Board Testability Design and Rating System," combines a previously developed testability figure of merit for printed circuit boards with models for the accessibility of the boards to produce a single numerical value representing the ease with which the system can be tested. The printed circuit board figure of merit was produced for

RADC by Grumman Aerospace (RADC-TR-79-327 "An Objective Printed Circuit Board Testability Design and Rating System") and its extension to higher levels of assembly was performed by the Boeing Aerospace Company. The report is available from:

The National Technical Information Service
5285 Port Royal Road
Springfield VA 22151
(703) 487-4650

Copies are not available from RADC.

Elections '84

Statements by Candidates for 1985 President-Elect

The following independently written statements by the two candidates for President-Elect, Dr. Jose B. Cruz, Jr. and Dr. Bruno O. Weinschel, have been especially prepared for readers of IEEE newsletters. It is hoped that these statements will supplement the biographical sketches and other statements made by the candidates which appear elsewhere in the IEEE literature and that they will assist IEEE member voters in the election process.

Statement by Jose B. Cruz, Jr.

Improvement of Technical and Educational Services to Members

Advances in computers, communications, microelectronics, electronic materials, electromagnetics, systems, energy, and other areas within the scope of IEEE concern have been dramatic in recent years. IEEE members must continuously learn a significant amount of new material. The nature of our profession demands that lifelong learning, in its broadest sense, occupy a central place in our individual activities.

The IEEE provides an organizational framework through which each member can participate to more fully utilize collectively developed technical services. Publications, short courses, workshops, Society and Regional conferences, and Section/Chapter meetings will continue to be the principal vehicles through which we achieve lifelong learning objectives. In view of the great diversity of our fields of activity and the speed with which these fields change, I believe that we need to develop new and highly flexible means of service for delivering educational and technical information.

This year the IEEE Publications Board—which I chair—will provide an experimental service called "Finding Your Way." This enables a member, who wishes to learn a new field, to access a computer system through a communication network. Members can obtain listings of tutorial articles, workshops and conferences, home study courses, special satellite broadcasts, short courses, IEEE press books, and other relevant aspects on desired topics. I propose to greatly expand this service so that a member with a personal

computer or terminal may obtain a variety of additional information services from IEEE.

Enhancement of Status of Members of the Profession

An important mission of the IEEE is to enhance the status of the members of the profession. This is a constitutional mandate which I strongly support. Although our principal activity in this regard is confined to the United States arena, many professional issues have universal applicability. Thus, we are addressing concerns affecting the status of the profession as a whole. Moreover, we are serving the needs of a large fraction of IEEE members who reside in the United States.

I am very supportive of the USAB positions on career enhancement issues including professional practices for engineers and their employers, portable pensions, patent rights, and age discrimination; salary surveys and other member opinion surveys; and legislative coordination. We need to develop more position papers to address the major problems facing the profession. Furthermore, we should give strong support to the joint USAB/TAB initiatives on: technology policy issues on productivity, technology transfer, energy, the environment, and communications.

As President I will work for the improvement of our technical services to IEEE members through expanded tutorial and educational materials. I will support the creation of a system that provides access to a variety of IEEE information services through a computer network. Overall, I will press for the establishment of a dynamic professional development program to enhance the status of members of the engineering profession.

Statement by Bruno O. Weinschel

1. *Necessity To Improve Competitiveness:* The most important problem confronting the economy today where engineers can play a more important role, is the *re-establishment of our competitiveness in world trade and against imports.* This requires the introduction of many new technologies into "smoke stack" industries and continuing *improvement of the manufacturing processes, quality control, reliability, after-sales-service and customer satisfaction.* The management of some companies including Hewlett-Packard and IBM are emphasizing these points, but many others have not yet grasped that we are in a worldwide competition. About 90% of all products used here are subject to foreign competition. We need better manufacturing, quality and reliability engineering as well as marketing research. Our private sector management must be improved. *Engineers must participate.*
2. *Continuing Education of Engineers:* Industry must budget for the *maintenance of human technical capital.* Especially, electrical engineering changes so rapidly that continuing education is necessary to stay abreast of current technologies. We must *improve the utilization* of engineers, so that an engineer can use a greater part of his time utilizing his technical knowledge. This requires sufficient support by sub-professionals including technicians, tech writers, etc., and adequate facilities.
3. *Improvement of Engineering Education:* Many engineers feel unprepared for their jobs. Some schools still teach engineering on a narrow, disciplinary basis while in real life, the required knowledge is inter-disciplinary. For example, in semi-conductors, the demarcation between electrical

engineering, chemistry, solid-state physics and advanced fabrication processes has practically disappeared. This needs to be reflected in the *structure and programs* of engineering schools. Since engineers work with other departments as well as the public, they must be able to *communicate effectively.* This is essential if more engineers are to become leaders in the shaping of policy in industry and government.

4. *Long-Term Civilian R&D by Industry:* About 70% of U.S. R&D is supported by defense. While important to national security, the Japanese and West Germans, as a percentage of GNP, spend more on non-defense research. Wealth, jobs and the trade balance are closely related to the amount and quality of non-defense research. Our industries must perform more long-term R&D in civilian products, services and process technology in order to improve the quality of life both here and in the rest of the world. Technology has improved and must continue to improve health, communications, environment, transportation, cost of energy and utilization of materials.

5. *Support for Engineering by the National Science Foundation:* The NSF by law must support both *science and engineering.* Historically, it concentrated on basic science. Its budget is about \$1.5 billion. Grudgingly, within the last six years engineering increased to 10%. Its engineering research is not supportive of industry's new technologies. The needs of highly technical *industries* have outrun their support by the NSF. Our technological *competitiveness* is closely coupled to the *quality of our engineering research and talent.* Excellence in science is necessary but not sufficient. The NSF must improve the support of engineering research and education, resulting in new and better products and services.

Statements by Candidates for 1985 Executive Vice President

The following independently written statements by the two candidates for Executive Vice President, Dr. George P. Rodrigue and Mr. Merlin G. Smith, have been especially prepared for readers of IEEE newsletters. It is hoped that these statements will supplement the biographical sketches and other statements made by the candidates which appear elsewhere in the IEEE literature and that they will assist IEEE member voters in the election process.

Statement by George P. Rodrigue

The IEEE is primarily a technical organization and has limited financial assets. Unlike a major corporation or government agency, the IEEE cannot hire full-time professionals to carry out most of its programs. However, the IEEE has enormous resources in its volunteer members, and its professional staff is best utilized to facilitate the voluntary actions of members. Our meetings and conferences are successful because interested and capable engineers volunteer both time and talents. Our publications are pre-eminent in many fields because reviewers, authors, and editors volunteer their efforts. In the professional area members write position papers, testify before government agencies, and lobby with local school boards, and the aggregate of individual member reputations has political power.

The IEEE has a good track record, but much remains to be done in making the engineering profession a rewarding life-long career. I believe that the IEEE Board of Directors should promote programs that foster collective and mutually supportive actions on the part of IEEE members. The program "Finding Your Way" that I successfully urged the Board to approve last year is one such example. This program builds its data base on the recommendations of technically qualified members, and will provide to IEEE members guidance on the best tutorial material available in a broad range of specific technical areas.

Programs in the professional area are also most successful when a heavy infusion of volunteer effort exists. I believe that part of the problem with the AAES is that it has no significant base of volunteer support. A true pooling of the knowledge and talents of engineers from various societies

with common professional goals must be achieved. Top-down organizations rarely work on a voluntary basis.

Statement by Merlin G. Smith

It is an honor to be considered for the position of Executive Vice President. Participation in the Executive Committee and Board of Directors affords the opportunity to consider all the interests of the Institute. We are particularly interested in promoting efforts which foster interorganizational or interdisciplinary synergisms. These and other priorities are:

- Joint industry, government and university programs.
- Cooperative activities between Society and Regional entities
- Collaboration amongst regional, technical and educational groups in the generation of affordable educational programs
- Conference services to an increasing number of members

- Publications to serve a broader member base.
- Intersociety conferences and publications
- Individual-recognition programs
- Recognition of Engineering and Computer Science professions
- Responsible participation in societal and governmental forums
- An environment encouraging greater volunteer participation.

One of the specific functions of the Executive Vice President is to chair the Conference Board. As a founder and a current member of this Board, we can be effective in the brief one-year term of office. We also bring the experience as a past chairman of a major conference board, the National Computer Conference Board, chairmanship of the NCC, founder of the Comcon Fall series, and initiator of a number of workshops and meetings.

We have the support and encouragement of our employer, and we are prepared to give it a good effort.

*These candidates will usher in the IEEE's second century.
What better way to participate in this gala event than to vote?
The percentage of eligible voters who do vote in our elections has been rather low in recent years.*

This is the time to reverse that trend and participate in the one activity that we are all entitled to, at no cost to ourselves.