



RELIABILITY GROUP NEWSLETTER

January 1971 Vol. xvi · Issue 1

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Editor's Notes

"Material for the April issue must be in the editor's hands by February 26."

A major part of an editor's job is to seek improvements in the publication for which he is responsible. One obvious place to look for ideas is in similar periodicals. To facilitate the search, all IEEE Newsletters are automatically mailed to each of their editors.

A number of ideas thus obtained have been introduced in this Newsletter over the past years. Some others of possible merit have been shelved due to the Editor's viewpoint and personal bias. A few of these shelved ideas are noted below, with commentary, in the hope that membership views in conflict with the Editor's will make themselves heard:

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Some Newsletters give greater detail on conferences and on IEEE elections and honors, duplicating coverage in the monthly SPECTRUM. This Newsletter confines itself to such items as are of potential special interest to G-R readers, on the assumption that all members receive SPECTRUM and affiliates don't care about IEEE-specific matters.

Some Newsletters (as well as SPECTRUM) have become more or less deeply involved in three related non-technical interest areas: socio-technical implications, the role of IEEE, and employment. Your Editor refuses to use the Newsletter as a platform for his own views in the first two areas, feeling that to do so would be to take improper advantage of his position. This does not imply that the Newsletter will not cover the subjects; submitted material, from readers or (as in this issue) from other appropriate sources, will be considered for publication.

In the area of employment, where several Newsletters have made gratis space available for positions available/men available advertising, your Editor feels that a quarterly publication cannot perform a useful function. The minimum lead time from receipt of material to Newsletter delivery is a month and a half, and that is possible only if receipt coincides with the deadline; the maximum is over four months. As bad as the employment situation may be, few people want their ads to appear with that much delay.

Comments on editorial philosophy as well as material submitted for publication will be welcomed.

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CHAPTER NEWS

Boston

The Boston Chapter, carrying on its tradition of maintaining a busy and diversified schedule, has provided the following calendar of events for the 1970-71 season:

September 29	R. L. Drake and J. Harackiewicz, "Designing for Minimum Life Cycle Costs"
October 22	A. Spear, "Systems Engineering Management"
November 9	C. T. H. Lee, Fall Lecture Series
	16
	23
	30
November 19	E. Doyle, "In-Depth Failure Analysis"
December 3	P. McMahon, "Air Pollution and the Automobile"
January 14 (Thursday)	A. Sternberg, "Product Liability" (Sheraton-Lexington, 8:00 p. m.)
February 25 (Thursday)	M. Johnson, "A Case History of Application of MIL-STD-499" (RCA-Bedford, 5:30 p. m.)
March 3	William Grady and Herbert Schwartz, Spring Lecture Series (MITRE-Bedford, 6:00 p. m.)
	10
	17
	24
(Wednesdays)	
March 18 (Thursday)	D. Zimmerman and D. Reese, "Navy Standard Hardware Program (RCA-Bedford, 6:00 p. m.)
April 22 (Thursday)	All Day Seminar (Colonial Hilton - Lynnfield, 8:30 a. m.)

Montreal

By acclamation, the Chapter elected Duco W. Weytze to be Chairman and Bill Lee to be Vice Chairman for the 1970-71 season.

The season began with a four-part film-lecture series held November 18 and 25 and December 2 and 9. The series was based on nine Lockheed Electronics/U. S. Navy films and presented as a basic reliability orientation course. The first meeting of the series, dealing with Reliability Planning, featured G. D. Danzig of CAE Electronics as the speaker and a plant tour of CAE, to view the newest development in flight simulators, conducted by CAE Vice President of Operations N. B. Cavadias. At the second meeting, on Reliability Training, the speakers were D. Kiang and F. Moller of Canadian Marconi. V. V. Vaidya of CAE spoke at the third meeting, on Reliability Design, and R. Neogy of Canadair covered Reliability Control at the final session.

The balance of the program for this season will consist of an "Assurance Sciences Program Management Course," tentatively scheduled for Wednesday evenings from February 3 to March 11. The course is intended as a progressive study of the practical implications of the assurance sciences as a profitability contribution to industry in general. A nominal fee will be charged.

The Reliability Group Newsletter is published quarterly by the Reliability Group of the Institute of Electrical and Electronics Engineers, Inc. Headquarters address: 345 East 47th Street, New York, N. Y. 10017. Sent automatically and without additional cost to each member of the Reliability Group.

Second class postage is paid at New York, N. Y.

New York - Long Island

Officers for the 1970-71 season are Robert H. Gauger, Chairman; Dominic Yodice, Vice Chairman; Dr. M. L. Shooman, Program Chairman; Harvey Berman, Publicity and Arrangements; and Robert E. Jack, Secretary-Treasurer. Bob Gauger also serves as Product Assurance Conference Coordinator.

Philadelphia

Completing the schedule announced in the October Newsletter, two meetings are to be held at the Presidential Apartments, Philadelphia, on March 11 and April 21. The March meeting will feature T. Weir on "Advantages and Disadvantages of Bayesian Statistics"; at the April meeting, Dr. Gray -- Professor of Circuit Theory at the University of Pennsylvania -- will discuss a special reliability topic.

The annual All-Day Seminar on May 20 may be held at the University of Pennsylvania; details have not been confirmed as yet.

San Francisco

On October 8, K. Farrier addressed the Chapter on "Systems Reliability Analysis." The November 12 meeting heard F. Bower speak on "Failure Modes in IC's."

The following schedule has been established for the balance of the season:

January 14	Reliability Aspects of Video Tape Development (Hewlett-Packard Training Center)	Speaker to be announced
February 11	Applications of the Scanning Electron Microscope -- Seminar (Lockheed Missiles & Space Co.)	Panel
March 11	Planning for a Reliability Program (PH104, Stanford University)	P. Coffman, Lockheed
April 8	Reliability Problems in a New MOS Product Line (PH104, Stanford)	C. Botchek, Larse Engrg.
May 13	MIL-STD-883: "The Other Side of the Fence" (PH104, Stanford)	J. Feldt, Nat'l Semi-Conductor

Twin Cities

The Twin Cities Conference on Component Reliability, held September 9, found the six papers presented attended by an average of 65 persons. At the November 19 luncheon meeting, a paper entitled "Reliability Predictions" was presented by Robert E. Myers, Director of Engineering Reliability and Maintainability Evaluation, Control Data Corporation.

The January 28 meeting, to be held at noon at the Jax Cafe, Minneapolis, will hear Kenneth Thurber talk on "Fault Diagnostic Testing in Cellular Logic Arrays." The Chapter is presently investigating the possibility of having Mr. Ralph Nader or someone from his staff discuss the impact that the Reliability Assurance discipline can have in the area of consumer products and what approaches to commercial and consumer problems can be taken by the "assurance sciences" in general. It is hoped that this meeting can be set up for March or April.

Washington

The Chapter's participation in the successful eleven-speaker ASQC/NASA Space Reliability Program Seminar on October 12 was followed by meetings on November 12 and December 3. At the latter, Robert E. Braland and Riley C. Horne of ARINC spoke on "Reliability Prediction for Non-Electronic Equipment." Future plans include participation, as host chapter, in the 1971 Annual Symposium on Reliability and a chapter meeting early in 1971 at which FARADA will be discussed by cognizant personnel.

AD HOC COMMITTEE

AD HOC COMMITTEE -- PROFESSIONAL AND ECONOMIC WELL-BEING

Professor Raj Mittra of the University of Illinois and G-AP has asked all IEEE Group Newsletters to publish the message reproduced below. We comply, in conformance with the viewpoint expressed in the Editor's Notes in this issue.

Message from the "Ad Hoc Committee to delineate the problems and recommend solutions affecting the professional and economic well-being of the electrical engineer."

This committee was appointed on September 17, 1970 by Dr. R. Hiatt, Chairman, Ad Com, G-AP at the 1970 G-AP Meeting in Columbus, Ohio, following a panel discussion on the subject "The Role of the IEEE in the Seventies" with IEEE President-elect Dr. J. Mulligan as the principal speaker.

After soliciting the views of a large group of attendees at the symposium, the following list of problems that face the electrical engineers have been prepared.

List of problems facing the electrical engineering community:

1. Need for guidance from a national organization with respect to training and utilization of electrical engineers so as to avoid the problems of large scale lay-offs and disappointing job markets that discourage bright students from entering into the profession.
2. Lack of a proper vehicle or official voice that expresses the collective views of electrical engineers.
3. Lack of an organization that works toward the enhancement of professional image of the engineers and better communication with the society.
4. Lack of portable economic benefits, particularly pensions.
5. Need for providing employment advisory service and company profiles and working toward a contractual arrangement for employment of engineers.

The list is by no means exhaustive and additional entries will be welcomed by the committee.

A tentative list of suggested solutions have also been prepared and is given below:

1. Do nothing. Let the law of supply and demand take care of the surplus or shortage of engineers that occur from time to time. It is up to the engineers to save up when the times are good and thus be prepared for the rainy days that are bound to occur from time to time. Engineers are basically individualistic and they would rather deal with their problems on an individual basis.
2. Increase the scope of the IEEE so that it is dedicated to serve the economic as well as technical interests of the electrical engineering community. This could be accomplished via a constitutional amendment that would change the IEEE into a 501 C-6 organization from the 501 C-3 (tax exempt) organization that it presently is. This implies that IEEE would become a lobbying organization and as a consequence would lose its tax-free status. The membership dues will obviously increase. Realistically, only long range benefits would be expected from the lobbying activities: for instance, no jobs would be created overnight. One argumant says that the increase in dues coupled with the fact that no immediate benefits would accrue from the change in status would encourage many members to leave the organization. However, a counter argument in favor of the change of status is that without such an organization the future for the electrical engineer would be bleak forever. A start has to be made in a direction which will provide the electrical engineering community an official voice and the opportune moment is now.

3. Leave the IEEE unchanged and join the National Society of Professional Engineers (NSPE) as an associate member for a fee of about \$40.00. The latter organization currently enjoys a C-6 status. They may be willing to do the lobbying on behalf of the electrical engineers and thus provide them with a tool for influencing the attitudes and policies of the Federal Government on a long range basis.

4. Create a sister organization with a C-6 status and couple it with the IEEE leaving the latter unchanged except for a cooperative arrangement with the new organization. It should be realized that this suggestion is somewhat impractical since a C-3 organization loses its tax shelter if it has a cooperative arrangement with a C-6 organization.

5. Join a labor organization, e.g., the AFL-CIO. This will enable the engineers to enter into collective bargaining with their employers, set up a wage structure in a manner similar to the ones that apply to other skilled workers. Many engineers find this a bitter pill to swallow; however, it should be noted that a number of groups of white collar workers have recently elected to follow this route (perhaps in desperation?).

Other suggestions for solutions to the problems facing the electrical engineers today would be most welcome. It is only through your response that we can gauge your reactions to the proposals outlined above.

It will be very helpful to us if you will fill out the following form below and mail it back to us as soon as convenient. This is an urgent appeal' to all IEEE members and we certainly hope that you will respond at an early date.

Respectfully submitted,

V. Galindo, TEW Systems
A. Kaienski, Electroscience Lab., Ohio State
G. Thiele, Ohio State
B. Steinberg, General Atronics
R. Mittra, University of Illinois, Chairman

Opinion Poll

1. In your opinion which of the five problems listed above require immediate attention of the electrical engineering community.

List by number

2. List the five solutions suggested above in order of your preference.

most preferred

least preferred

3. Please supply a list of additional problems and suggested solutions, if any.

Mail to: Professor Raj Mittra
Department of Electrical Engineering
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Urbana, Illinois 61801

Thank you.

AdCom Report

Meeting No. 86 of the G-R AdCom convened in Washington, D. C., on September 10 with 19 members and guests in attendance. It was announced that George Ebel, Ralph Evans, Ralph Kuehn, Val Monshaw, Marion Smith, and J. W. Thomas had been elected to three-year terms ending in 1973. The following have been nominated to G-R offices for 1971:

Chairman	Val Monshaw
Vice Chairmen:	
Technical Operations	C. R. Knight
Publications	P. K. McElroy
Meetings, Chapters and Membership	H. W. Williams
Education, Development and Standards	J. J. Naresky

Fellow Awards

Among the 123 IEEE members advanced to Fellow grade as of January 1 are the following G-R members:

Ralph E. Kuehn, Binghamton, "For contributions to the reliability of military and space electronic systems, and leadership in related professional activities."

Emile Labin, France, "For contributions in television, radar, pulse communications, radio location, and UHF vacuum tubes."

Ralph H. Lee, Delaware Bay, "For contributions in reliability and safety of electric industrial distribution and utilization systems and components."

New

Technical Committee

NEW TECHNICAL COMMITTEE ON HYBRID MICROELECTRONICS

The Parts, Materials and Packaging Group recently formed a new Technical Committee on Hybrid Microelectronics under the chairmanship of Mr. Stanley M. Stuhlberg, Raytheon Company, Bedford, Massachusetts. TCHM will be the official "voice" of IEEE and G-PMP on all aspects of the hybrid microelectronics field which relate to its scope and will specifically operate in the areas of new technology, educational programs, publications, meetings and standards.

CARAD Report

The two CARAD workshop sessions scheduled during the 1971 Symposium on Reliability are indicative of the effort on the part of G-R to bring new techniques and methods of analysis to the attention of its members. There have been many similar workshops at universities; those at the Symposium are among a few at national meetings, offering an opportunity to gain actual experience in running a time share computer.

CARAD Committee Chairman Clint Purdue writes, in part:

"I wish to acknowledge and thank the Reliability AdCom and Symposium Committee members H. E. Reese, Val Monshaw, L. J. Paddison, Dr. J. E. Condon, J. W. Thomas, and J. M. Wiesen for their encouragement and support of the CARAD Workshop idea.

"The assistance of Fred King, Manager EE Applications Development and N. Lee Beyer, Specialist Marketing Applications Sales, General Electric Co., Bethesda, Md., who furnished the remote terminals and manuals as well as acting as instructors, is duly noted and appreciated. Special recognition is also due Michael Schermer, Manager of the New Mexico Branch and George Elkins, Account Representative, General Electric Computer Time Sharing Service, Albuquerque, N. M., for their assistance and especially for the help in providing us with a User number which allows the class members to run problems on the GE Time Share System.

"The assistance of CARAD Committee member Bernie Tiger, RCA-DEP, Camden, N. J., is gratefully acknowledged and appreciated."

GRAD

"GRAD" EMPLOYMENT OPPORTUNITY PROGRAM

"GRAD" -- Graduate Resume Accumulation and Distribution -- is a computerized system available to graduates who have at least a bachelor's degree from an accredited, four-year college or university in the United States. It is also available to persons who may not have the bachelor's degree but whose level of membership in an engineering society requires certification of professional level.

GRAD is a cooperative activity of the non-profit College Placement Council and the Engineers Joint Council. It is not an employment agency; it is a facility for referring resumes. It is a confidential, no-fee service.

Additional information and registration materials are available from:

Mr. Carl Frey, Executive Director
The Engineers Joint Council
345 East 47th Street
New York, N. Y. 10017

or

Mr. Robert Herrick, Executive Director
The College Placement Council
P. O. Box 2211
Bethlehem, Pa. 18001

CONFERENCES

JANUARY 12-14	1971 ANNUAL SYMPOSIUM ON RELIABILITY (G-R, ASQC-ED, IES), SHERATON-PARK HOTEL, WASHINGTON, D. C.
January 19-21	1971 Mexico International IEEE Conference on Systems, Networks, and Computers, Oaxtepec, Mor., Mexico
January 31-February 5	1971 IEEE Winter Power Meeting (Panel Session on Research, Reliability and the Environment in the Power Industry; February 2), Statler-Hilton Hotel, New York City
February 17-19	1971 IEEE International Solid State Circuits Conference (IEEE Solid-State Circuits Council, Philadelphia Section, and University of Pennsylvania), University of Pennsylvania and Sheraton Hotel, Philadelphia, Pennsylvania
March 22-26	1971 IEEE International Convention and Exposition, New York Hilton Hotel and New York Coliseum, New York City
March 26	12th Annual West Coast Reliability Symposium (ASQC Los Angeles Section), International Hotel, Los Angeles, California
March 31-April 2	1971 Reliability Physics Symposium (G-R, G-ED), Stardust Hotel, Las Vegas, Nevada
April 5-6	1971 Annual Southeastern Symposium on System Theory (G-AC, G-SSC, Computer Society, and Georgia Institute of Technology), Georgia Institute of Technology, Atlanta, Georgia
April 12-15	NTC71 -- National Telemetering Conference and Exposition, Washington Hilton Hotel, Washington, D. C.
April 22-24	1971 Carnahan Conference on Electronic Crime Countermeasures (University of Kentucky), Carnahan House, University of Kentucky, Lexington, Kentucky
May 8-10	21st Electronic Components Conference (G-PMP, EIA), Statler-Hilton Hotel, Washington, D. C.
May 18-20	Spring Joint Computer Conference, Convention Hall, Atlantic City, New Jersey
May 24-26	1971 IEEE Power Industry Computer Applications Conference (Power Society), Statler-Hilton Hotel, Boston, Massachusetts
July 18-23	1971 IEEE Sumer Power Meeting and International Symposium on High Power Testing (Power Society), Hilton Hotel, Portland, Oregon
July 20-23	1971 IEEE Annual Conference on Nuclear and Space Radiation Effects, (G-NS, University of New Hampshire), New England Center for Continuing Education, Durham, New Hampshire
August 2-7	International Conference on Stochastic Point Processes, IBM Research Center, Yorktown Heights, New York

Short Courses

Newsletter policy with respect to short-course announcements, as established by the AdCom, is to provide publication for information only. No endorsement is implied, and no check on course content or instructor qualifications has been accomplished.

University of California at Los Angeles

Theory and Design of Ultra Reliable (Fault-Tolerant) Computers: Protective Redundancy, Diagnosis, Self-Repair Techniques: February 22-27. Six days, \$390. Contact: P. O. Box 24902, Continuing Education in Engineering and Science, University Extension, UCLA, Los Angeles, Cal., 90024

Cost-Effectiveness: Economic Evaluation of Engineered Systems: March 22-26. Five days, \$335.

Systems Evaluation and Measurement Techniques: Five days, \$325. March 29 - April 2.

University of Wisconsin

Engineering Liability in Failure Analysis: February 25-26. Two days, \$100. Contact: Donald E. Baxa, 725 Extension Building, The University of Wisconsin, 432 N. Lake St., Madison, Wis. 53706

Electrical Encapsulation: May 27-28. Two days, \$100.

PUBLICATIONS

From the American Federation of Information Processing Societies, 210 Summit Avenue, Montvale, N. J. 07645:

The Information Utility and Social Choice (300 pp., hard cover), \$9.00.

Proceedings of the 1970 Fall Joint Computer Conference, \$26.00 (\$13.00, prepaid, for IEEE Computer Society and other AFIPS constituent society members).

From the IEEE Publications Sales Department, 345 East 47th Street, New York, N. Y. 10017:

Record of the 1970 EMC Symposium, \$9.00; Student Supplement, \$1.50 (\$6.00 and \$1.00 for IEEE members).

Electrical and Electronics Abstracts, \$216.00 per year. Computer and Control Abstracts, \$108.00 per year. (Both as a package, \$252.00 per year)

Current Papers in Electrical and Electronics Engineering, \$28.00 per year (\$14.00 for IEEE members)

Current Papers on Computers and Control, \$24.00 per year (\$12.00 for IEEE members)

(The four journals indicated above all are available in printed form or on microfiche)

From the National Bureau of Standards, available through the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402:

Catalog of Standard Reference Materials, NBS Special Publication 260, July 1970; SD Catalog No. C13.10:260; 84 pages, \$0.75

Precision Measurement and Calibration: Electricity - Radio Frequency, NBS Special Publication 300, Volume 4, June 1970; SD Catalog No. C13.10:300/Vol. 4; 456 pages, \$5.50