Message from the President

I just returned from RAMS in Las Vegas. Despite the economic troubles, the attendance was pretty good. The program was excellent, and I am sure those attending felt good about the program. It was fun for me to meet some more of the membership. Our next meeting will be held on Tuesday morning, March 31st in conjunction with the International Reliability Physics Symposium (IRPS).

The Adcom is reviewing a new IEEE book on Probabilistic Risk Assessment. One benefit of our reviewing the book is that we can then offer it at a discount to our members when it is released.

I have a strong desire to see the content and relevance of our newsletter grow. In this regard, I welcome any contributions that you would wish to make. We would like to see the newsletter become a magazine with timely application articles, book reviews, special interest features, etc. Then it would be an organ to disseminate practical and timely information to practitioners in the field. There are also some economic advantages in publishing a magazine. The IEEE would include this in their all transaction distribution for which we gain a significant return.

I have mentioned the development of a series of monographs on reliability. These would cover such subjects as FMEA, software reliability, failure analysis, ESS to mention several. I have heard from a couple of you regarding your interest in this area. We have a boost now. Sandia Corporation is developing some similar material which they eventually plan to go public with. There is mutual interest in our working together. The reliability society leader on this effort is Mr. Ken LaSala.

Please contact Ken directly if you have questions or interest to participate. His address is:

Ken LaSala
DMA AQLM
8613 Lee Hwy.
Fairfax, VA 22031-9153

Dr. Samuel Keene
President, Reliability Society
Reliability Society Newsletter Inputs

All RS newsletter inputs should be sent to:
Mr. Bruce Bream
NASA Lewis Research Center, M.S. 5014
21000 Brookpark Road
Cleveland, OH 44135
Tel: (216) 433-6332 Fax: (216) 433-5270
Email: scbream@lms02.larc.nasa.gov

The schedule for submittals is:

<table>
<thead>
<tr>
<th>Newsletter</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>January</td>
<td>November 19</td>
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<tr>
<td>April</td>
<td>February 20</td>
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<tr>
<td>July</td>
<td>May 21</td>
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<tr>
<td>October</td>
<td>August 20</td>
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Editor's Column

I'm quite pleased with the response we are getting for input to the newsletter. I received a couple of letters to the editor regarding the January issue letter on the exponential law from Kam Wong. Both of these support Kam's position. I'd like to hear from some of you that still support the exponential law but so far I only have responses from those refuting it. For exponentialists out there, I included the latest status of the MIL-HDBK-217 revisions. Our Swiss chapter has been very active and I'm glad to be able to pass on this information for our international members. Total Quality Management (TQM) affects R&M and you will note that Rome Labs has just released a series of documents on this subject. You'll find the first release of our R&M speakers list. Tom Fugan has been working on this new development to support the need for qualified speakers in the R&M area. Along these same lines, Joe Gressel, our VP of Technical Operations, is developing a database of technical expertise for our R&M membership. He hopes you will look over the questionnaire in this issue and take the time to mail it in.

Bruce Bream
Editor, RSNI.

Bylaws Amendments

The Reliability Society Administrative Committee has voted to amend the Society Bylaws (current issue 5/1/86). Article 5.1 is amended to read as follows:

"5.1. The terms of elected officers shall be one year, commencing on January 1. The president may be re-elected to a second term of one year. If the second term year exceeds his/her elected AdCom membership term, the re-elected president shall become an ex-officio member of AdCom, with vote, for the term year. A president, having served his/her elected terms, shall not again be eligible for election to the presidency until a lapse of three years. An AdCom member may be elected to vice presidential office for any or all of his/her elected years on AdCom, but shall not remain in any one vice presidential office for more than three consecutive years. Eligibility is restored after a lapse of one year."

These changes were made to resolve questions of intent of the prior Article 5.1, and to allow more flexibility in the selection of officers. The major effect is to allow a first term president of the society to serve a second term as president even though he/she is serving a last term as an AdCom member.

Reliability Forum

The Exponential Law - Responses

I had long despaired of finding a kindred soul who shared my disgust with the formalism practices by the reliability community. The article on the Exponential Law rekindled my enthusiasm. The only justification for "exponentialism" is its mathematical convenience; it does not describe the real world. My disgust led me to write a book, published in 1981, "Extending the Limits of Reliability Theory," John Wiley and Sons. Analyses show that even in a theoretical world, except for the exponential distribution, the achievement of equilibrium requires a long time. Most equipment will have reached the end of its economic life well before the time interval needed to reach this equilibrium; in that transitional period, failure rates can substantially exceed equilibrium rates. Indeed in the real world the failure rate is never a constant.

Harold Goldberg
311 S. Hollybrook Dr., #303
Pembroke Pines, FL 33025
Tel: (305)431-2796

I could not agree more with the Newslet-letter article on the Exponential Law that appeared. I have written an article relating to the subject. It is entitled: "Making Reliability Estimates When Zero Failures Are Seen In Laboratory Ageing". It was published in the Materials Research Society Symposium Proceedings, vol. 184, "Degradation Mechanisms in III-V Compound Semiconductor Devices and Structures", page 3, 1991. I am also writing a book on making credible reliability estimates and in it will be a pro-and-con examination of the Exponential Law. This book will serve as a way to deal with the mindlessly widespread use of the Exponential Law.

Franklin R. Nash
A&T Bell Labs
Room 7C 401
600 Mountain Avenue
Murray Hill, NJ 07974-2070
Tel: (908) 682-3491

This section provides a means for members to express their views on R&M topics of interest to the entire R&M community. Contributions are welcomed by the editor. Authors may send their letters either by mail or Email. A daytime phone and complete mailing address must be provided. RSNI reserves the right to edit the content of letters received.
Chapter Activities

Boston

The Boston Section reliability chapter is continuing its successful season.
Our monthly meetings continue though the turnouts are not quite to the level that we would like to see them.

The November monthly meeting was on “connector reliability” by Bob Malucci from Molex Incorporated. The December monthly meeting was on Estimating Warranty and Service Costs from MTBF’s by Jim Fahay of Data General. The January meeting was on ISO 9002 Implementation in a Computer Firm by Brenda Subbugh also of Data General.

The February monthly meeting was on the Armand V. Feigenbaum Massachusetts Quality Award by Paul Kales, University of MA at Lowell and the MA Council for Quality. The March Monthly meeting is Improving Your Company Using the Malcolm Baldrige Framework by Gene Carnabba of Motorola Codex Corp. Our 30th Annual All Day Seminar will be held this month in Framingham, MA. The title of the seminar is “Reliability Engineering: Alternative Approaches for Today’s Business Environment.” The keynote speaker will be Nasar Farid, associate professor from Northeastern University.

There will be eight papers presented on a wide variety of topics.

We are also holding a spring lecture series on ESS: Theory and Application authored by Gene Bridger. This lecture series will consist of 2 days of lectures and two days of laboratories.

Regard,

Gary Kushner
Boston Chapter Chairperson

Cleveland

The Cleveland Chapter tried something different for our Thanksgiving Special meeting. Bob and Ruth English, a very talented retired NASA couple, shared “A Photo Essay of Iceland” with us. As usual this was very well done. In all attendance enjoyed the trip.

Our 4th meeting was on Optical Digital Computing. This meeting was from the IEEE Learning Channel Videoconference Seminars via satellite. Two experts, Dr. Alan Huang and Dr. David A. Miller talked about uses of optics, current devices and optical systems. As usual every seat was filled.

The annual mid-year social was held at NASA LeRC Guineu house on December 17th. Old friends and new members got together for an evening of relaxation and a cold buffet. No speakers were used. Pool, ping-pong and dancing were enjoyed by many.

We are happy to report that RAMS ’92 was a huge success. Our session on “Design Practices for Reliability” and “The Future Role of R&M Assurance in Space Flight Exploration” were interesting and well attended. Many thanks to the people who participated in the sessions. Our chapter will help RAMS ’93 on the Registration Committee.

Vince Lalli, Chairman
Cleveland Chapter

Dallas

The Dallas Chapter has a wide range of topics for technical meetings in 1992. In January, we had a humorous and enlightening talk by Marvin Wilkins (Texas Instruments) regarding “lessons learned” in systems engineering. His main focus was on methods to make concurrent engineering successful based on his vast experience. In February, the topic shifted to software reliability. Robin Leogrande (Texas Instruments) addressed the needs of software disciplines that use software code, especially in models and systems. March’s technical meeting will deal with the “Emergence of Simulations Based on Concurrent Engineering of Mechanical Systems”. The speaker is Dr. Edward J. Haag (Collider Distinguished Professor of Mechanical Engineering at the University of Iowa). The rest of the year will round out with a meeting on Integrated Diagnostics and another on Physics of Failure.

Another aspect of our chapter that we focus on is membership and participation. How can we each strive to increase IEEE Reliability Society membership and participation? Get the word out!

There are many ways to communicate IEEE activities to others to increase participation. IEEE has some great activities, but how can we make engineers aware of these events? Look at your company or business. Is there an electronic bulletin board service? Get in touch with the bulletin board editor and request a free slot. The editor can also help you find a meeting newsgroup. One professional society meeting announcement runs for three days with readback coverage on the order of thousands. Another communication tool is electronic mail (e-mail). If e-mail is available in your company, try to get a list of reliability engineers. This may be possible through human resources, personnel or your engineering council. You can e-mail the IEEE activity announcements to fellow engineers with a higher likelihood of reaching your target audience.

Many companies also publish newsletters. You can use this outlet to make others aware of IEEE. Volunteer to write an article for your division’s or group’s newsletter. You’ll be giving IEEE and yourself some positive press.

Another potential audience is Engineering Alumni Associations. If you have a special event of broad interest, you may be surprised at the level of interest from University Alumni members.

Professional societies like IEEE have a lot to offer. Different people may seek different benefits from participating. Some of the benefits include a forum by which to network with other professional, b) a vehicle by which to stay current on your profession, or c) a channel through which to perform organized community service.

Professional societies sometimes struggle with their membership growth. We have also, but we are utilizing many avenues in the Dallas area to encourage participation.

Spread the word on IEEE activities in your company soon. You’ll feel good about helping others get in touch with IEEE. The high level of interest from others will surprise you!

Julie England

Los Angeles

Two technical meetings were held. A very interesting presentation on Wafer Scale Technology was given by Bruce Christopher of Anamatic. At another meeting, Dave Franklin of Hughes Aircraft spoke on Failure Analysis and Risk Assessment. Dave is currently the vice chair of the Los Angeles Chapter. In February, Irv Doshay will present software developed on Combined Hardware-Software Reliability Simulation via a PC. Other meetings include, Multimedia and Special Effects, Electric Vehicle Status, Digital Cellular Technology, and a seminar on Preparation of Compound Documents. During Engineers week in February a staff member, Will Myles, will put a Discover E display at the local Los Angeles county library with literature ordered and paid for by the Los Angeles Chapter. Will is also coordinating his efforts with Hughes Aircraft and plans on having Hughes build hardware for the display as well.

Our Videotape Exchange program continues to be popular. Currently we have over 100 videotapes available. The latest lists can be viewed and downloaded through our bulletin board.

Loretta Arellano
Los Angeles Chapter Chair

Philadelphia

Our meeting schedule for the last year has been:

9/24/91 - Engineering Management - Career Path or Dead End, Mr. H.C. Iori, III, G.E.
10/15/91 - Wavesets - A New Frontier, Dr. S. Zietz, Drexel University
11/19/91 - Doppler Radar Detection of Aircraft Vortices, Mr. J.D. Nespor, G.E.
12/1/92 - The Role of Space Robotics in U.S. Competition, Mr. Robert Lesser, Temple University

Fulvio F. Oliveto
Chairman, Reliability Chapter
Philadelphia Section

Swiss

The Swiss Reliability Chapter held a number of meetings, conferences, and courses this last year.

1991 Courses and Seminars:

4-24 - Course on Reliability and Maintainability of Equipment and Systems
Prof. A. Biroldi
18-19 - Sept Failure Mechanisms and Analysis of VLSI ICs (M. Cappa)
26 Sept - International Seminar on Reliability Aspects in Surface Mount Technology (ETH Zurich)

1991 Meetings:

Importance of Electronics in Failures of Nuclear Power Plants (Dr. L. Miett, ETH, Zurich), Emission Microscopy - Theory and Applications (Dr. J. Koehler, Siemens AG, Munich), Reliability of Binary Systems (Dr. B. Gerlach, Humboldt University, Berlin)

Software Package for Reliability and Availability Computation of Very Complex Systems (R. Bernet, ETH, Zurich), Data Retention in Large EPROMs (R. Loemmann, ETH, Zurich)

All meetings, conferences, and courses were of high technical level and prompted extensive discussions.

Plannings for 1992:

Workshops:
7-8 May - International Workshop on SMT Reliability and Manufacturing Issues (Lugano)

(Editors Note: See Conference Calendar for registration and more information)

Courses:
31 Aug - Sept - Failure Mechanisms and Analysis of VLSI ICs (M. Cappa)
2-4 Sept - Reliability and Maintainability of Equipment and Systems (Prof. A. Biroldi)

Meetings:
22 Jun - Optimal Reservation of Spare Parts in Complex System (B. Willmann, EWI, Zurich)

6 Jul - Parametric Estimation for Complete Reliability Data (Dr. B. Gerlach, Humboldt University, Berlin)
3 Sep - Reliability Aspects in Electrical Contacts (Professor J.G. Zhang, Beijing)
2 Nov - Reliability Growth (R. Brinkmann, G+D, Schalfhausen)

The Reliability Laboratory of the ETH Zurich invites all members of the IEEE Reliability Society to the 5th anniversary of its cooperation with industry which will be held on May 19 at the ETH Zurich.

Alessandro Biroldi
Chairman

Tokyo

An R&M symposium will be held 8-10 June 92 with 50 papers to be presented.

Yoshihisa Suzuki
Chairman
Reliability Chapter
Tokyo Chapter

Electronic Bulletin Boards

Los Angeles Chapter
(818) 766-7644
300-2400 Baud (BNNI)
Free Membership
(400+ members)
Meeting information, Joblines, Email, Video Tape Exchange Information, Shareware an Demos

Statistics Bulletin Board System (316) 265-3036
1200-2400 Baud (BNNI)
Free Membership
Statistics, Reliability

April 1992

Reliability Society Newsletter
Reliability AdCom Minutes
Software Reliability Technical Committee

Committee activities this past few months have concentrated on the preparation of a new educational program intended to widen the understanding of Software Reliability. A full semester course has been prepared to be presented as part of the advanced engineering curricula offered by local colleges and universities.

This credit course will use the text "Software Reliability - Measurement, Prediction, Application", by Musa, Imanino and Okumoto. This book is gaining acceptance and was described in reports over the past two years.

It may be also noted that AT&T, Mr. Musa's employer, is now offering a "hands-on" short course themselves for $1200. The course that Mr. Lipow, who has been the most active member of our committee, has now organized material that will deal with considerably more significant issues that were addressed in the Musa et al. text. Of particular concern are practical methods of evaluating conceptual software hardware designs in order to optimize the tradeoff of reliability and cost. Initial offerings of this course has begun at the Naval Warfare Assessment Center, Norco, California.

Irving Doshay
Technical Committee Chairman
Tel: (310)454-1667
A.M. Works: (310)334-0658

Human Performance Reliability Committee

An EIA-sponsored revision to MIL-STD-785 was drafted to include both the impacts of software and the human on system reliability. The EIA-G4 committee approved the expanded concept of MIL-STD-785. A review of the proposed drafts was requested in June 1991, but as of this date, no comments have been received. It is noted that progress on revising MIL-STD-785 is being delayed by a clear identification by the Air Force of who is the preparing activity (PA). Currently, Aeronautical Systems Division is the PA, but they have expressed a desire to have the responsibility transferred elsewhere. No final decision has been expressed by the Air Force.

An HPR tutorial has been completed for RAMS 92. This form of the tutorial is the "short form," an expanded, more procedural version is available for other uses.

Kenneth LaSalla
Chairman, Human Performance Reliability Committee

Maintainability Committee
Reliability Engineering has benefited from the Computer-aided Acquisition and Logistics Support (CALS) initiative with design improvement and all phases of design. This is most evident in the electronic design automation (EDA) industry where the production of computer-aided design frameworks have included the integration of third party tools for thermal analysis, reliability prediction, etc. These frameworks basically create a design environment in which a designer develops an optimum design by invoking grading tools to permit achievement of an integrated product design. It is interesting to note, however, that while this can be viewed as progress, there is concern about the data and equations employed to perform the prediction of reliability. What we have is two distinct camps that have the same objective but different approaches for achievement. If we look at the present day environment with emphasis on total quality and design application being defined as satisfying six sigma quality levels we are confronted with a focus on process driven design. Supporters of this philosophy insist that data such as found in MIL-HDBK-217 is not sufficient to achieve these levels but instead require a physics of failure approach to design process optimization. On the other hand, framework vendors are integrating tool sets that rely on prediction data and equations primarily taken from MIL-HDBK-217 to establish a quantitative level of reliability. There has been much controversy about MIL-HDBK-217 and its application to design. Since prediction techniques as well as failure analysis play a role in engineering design, a solution to these concerns can be found in the collective continuation of reliability engineering research and development. Ironically, some administrators view reliability engineering as manufacturing technology in strict research and development judgments and thereby limit expenditure for IRAD in this area.

Joe Guerresing
VP Technical Operations
Tel: (410)765-7070

Reliability Society Membership Survey
Your support is requested to help in the development of a technical expertise database. This database is required to enable the administrative committee to better serve the needs of the society membership and to facilitate requests for technical direction and expertise. We are looking for expertise in reliability, maintainability, testability, and safety engineering. The data you provide should be broken down into specific areas of the field of expertise, i.e. prediction, environmental stress screening, FMECA, parts, computer models, etc. Please take a few minutes to complete the following questionnaire:

Name:
Company:
Phone:
Fax:
Address:
City:
State:
Zip:
Country:
Area(s) of Specialization:
Specific Expertise (List):

CAD/CAM/CAE Tools Development:

Software Design/Development Experience:

Languages(s) spoken/read (optional):

Please return via mail or fax to:
Joe Guerresing
Westinghouse Electric Corp.
Electronic System Group
P.O. Box 746, MS 1701
Baltimore, MD 21203
Tel: (410)765-7070
Fax: (410)993-8126

RS MEMBERSHIP STATISTICS

As of 10/31/91
IEEE Reliability Society Speakers List

The following three individuals are the first to be certified for our Speakers List. If you are seeking a qualified speaker please contact them. If you would like to be considered for inclusion on this list, please contact me.

Thomas L. Fagan
ITI Defense
1000 Wilson Blvd.
Arlington, VA 22209
Tel: (703)247-2988
Fax: (703)726-8706

1) Harold Ascher
Operations Research Laboratory
Naval Research Laboratory
4555 Overlook Avenue
Code 5352
Washington, DC 20375-5000
Office: (202) 767-4873
Home: (202) 767-4779
Fax: (202) 767-3638

2) Mohammad Hashim
Brown & Root, Ltd.
Kingston Bridge Church
Chapel Grove, Kingston
Surry KT1 4AG Great Britain
Office: 081 943 8488
Home: 081 871 0476
Fax: 081 877 1173
Over 25 recent presentations and publications.

Geographical limitations: None, requires minimum two weeks notice for presentations outside UK

Transportation Requirements: Negotiable

Topical: Reliability Management (Program Plan Implementation)
Basics of Reliability Assessment
Software Reliability

3) Joseph H. Wijek, P.E.
440 Laguna Court
Livermore, CA 94550-5234
Tel: (510) 447-6338
Consulting engineer with 30 recent presentations
Geographical Limitations: None
Consulting engineer with 30 recent presentations
Geographical Limitations: None

Reliability Topics:
- Engineering Ethics and Social Implications
- Reliability Engineering (All Aspects)
- Careers in Reliability Engineering, Electrical Engineering, and Computer Science

TQM DOCUMENTS

In the course of implementing Total Quality Management, the Rome Laboratory of the U.S. Air Force Systems Command has prepared three technical reports which are available to the general public. These are:

RL-TR-91-29
“A Rome Laboratory Guide to Basic Training in TQM Analysis Techniques”, AD-A233385
This report describes the basic TQM analytical tools; Process Flow Charts, Ishikawa Diagrams, Statistical Process Control, Histograms, Pareto Diagrams, Scattergrams, and the Shewhart Cycle. A mythical scenario is used in which the tools are introduced to a willing, but untrained, manager (and to the reader) by a TQM Specialist.

RL-TR-91-48
“Measuring the Quality of Knowledge Work”, AD-A233354
This report discusses a variety of ways in which the quality of knowledge work can be measured, depending on the definition of quality and the intended use of the measure.

RL-TR-91-305
“Total Quality Management (TQM), an Overview”, AD-A242594
This report provides a comprehensive overview of TQM. It discusses the reasons why TQM is of importance, what it is and how one implements it. It describes the basic analytical tools, statistical process control, some advanced analytical tools, tools used to enhance the efficiency of process action teams, and action plans for making improvements. Methods used to assess quality efforts and ways to measure the quality of knowledge work complete the coverage.

All of the above were authored by the Rome Laboratory Special Assistant for TQM, Mr. Anthony Coppola, JR/ERSS, Griffiss AFB, NY 13440-5700, (315)30-4758, DSN 587-4758. Please do not request copies from Rome Laboratory; the laboratory does not maintain a supply. Interested parties should order copies through their technical libraries or directly from National Technical Information Service, Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161-2171, Tel: (703)487-4650.

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Fax: (612)853-3355

WASHINGTON/ NORTHERN VIRGINIA
Town Logge
VITRO Corporation
300 Maryland Avenue, SW
Arlington, VA 20030
Tel: (202)646-6337
Fax: (202)646-6938

WASHING
Conference Calendar

<table>
<thead>
<tr>
<th>DATE</th>
<th>CONFERENCE</th>
<th>PLACE</th>
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<tbody>
<tr>
<td>1992</td>
<td>30th Annual All-Day Seminar</td>
<td>Sheraton Tara</td>
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<tr>
<td>April 23</td>
<td>Reliability Engineering: Alternative Techniques</td>
<td>Route 9</td>
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<td></td>
<td>For Today’s Business Environment</td>
<td>Framingham, MA</td>
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<tr>
<td>Contact:</td>
<td>Jim Kalenbush, 6 Ohio Road, Tynesboro, MA, 01879-2365</td>
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<tr>
<td>New</td>
<td>New techniques and approaches over a diverse</td>
<td>Product will be presented</td>
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<tr>
<td>products</td>
<td>for achieving high reliability for less cost,</td>
<td>for achieving after April 22nd for $155 by calling (617)255-3394.</td>
</tr>
<tr>
<td>Registration fees include seminar, lunch, and dinner are $173 for IEEE members, $200 for non-members. Seminar Proceedings will be available after April 22nd for $155 by calling (617)255-3394.</td>
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May 3-6     | Custom Integrated Circuits Conference           | Boston, MA                |
| Abstracts  | due November 7, 1991                           |                           |
|           | Contact: Mrs. Roberta Kaspar, Technical Program |                           |
|           | Coordinator, CICC ’92, 1597 Ridge Road West,   |                           |
|           | Suite 101C, Rochester, NY 14615-2514            |                           |
|           | Tel: (716) 865-7164                             |                           |

May 7-8     | SMT Reliability and Manufacturing Issues        | Lugano, Switzerland       |
| Registration by April 15, 1992                |                           |
| Contact: Ms. K. Ambuhl, ETH Zurich, Tel: 01 256 27 43 |
| Reliability of Surface Mount Technology is becoming a hot subject because of pitch reduction and difficulties in cleaning. This workshop is being planned on the wake of the International Seminar of Sept. 26, 1991. Werner Engelmaier of Engelmaier Inc. and Dieter Bergman of IPC will talk on “Design and Land Pattern Definition” and “Design for Reliability and Quality for Manufacturing,” respectively. Other talks will be on “Rework and Repair” (B. Willis, EPS), “Solid Solder Deposition” (W. Mawial, Siemens, and M. Weinhold, DuPont), and “Cleaning and Reliability” (B. Ellis, Protonique). Every talk will be followed by work in small groups. |

May 18-20   | 42nd Electronic Components Conference          | San Diego, CA             |
| & Technology Conference                       |                           |
| Contact: Iswoni Turlik, Microelectronics Center of N.C., 3021 Connolly Road, Research Triangle Park, NC 27709 |
| Tel: (919) 248-1847                           | Fax: (919) 248-1455       |

Jun 10-12   | European Safety and Reliability                 | Copenhagen, Denmark       |
| 92         |                                                 |                           |
| Contact:   | Kurt Petersen, Systems Analysis Dept. RISO     |                           |
| National Laboratory, PO Box 49, DK-4000 Roskilde, Denmark |
| Tel: (45) 42 37 12 12 x3802 Fax: (45) 46 75 71 01 |

Jun 15-18   | COMPASS - 7th Annual Conference                 | Gaithersburg, MD          |
| Conference Information: Robert Ayers, ARINC Research Corporation, 2551 Riva Road, Annapolis, MD 21401, Tel: (301)266-4741, Fax: (301)266-4040 |

Program Chair: Dr. Edgar H. Sibley, Dept. of Information & Software Systems Engineering, George Mason University 4400 University Drive, Fairfax, VA 22030-4444, Tel: (703)993-1640; Email: esibley@gmuax.gmu.edu

Aug 25     | Advanced Technology Workshop                    | College Park, MD          |
| Registrations due                                  |                           |
| 15 May 1992 Device Failure Mechanisms            |                           |
| (See advertisement elsewhere in the newsletter for more information) |
| Contact: Pradeep Lall, CALCE Electronics Packaging Research Center University of Maryland, College Park, MD 20742 |
| Tel:(301)405-5342 Fax:(301)314-9477              |

Aug 25-28   | International Reliability Availability          | Philadelphia, PA          |
| Conference on generation, transmission, and distribution, including application, modeling, design, and manufacture. |
| Program Information: Mr. Bob Filipović, Pennsylvania Power & Light, 1005 Brookside Road, Allentown, PA 18106, Tel: (215)396-5158 |

Oct 4      | GaAs Reliability Workshop                      | Fountainbleau Hotel        |
| Preceding the GaAs Symposium                       | Miami Beach, FL            |
| Seventh annual one-day workshop bringing together researchers, manufacturers, and users of GaAs devices. Cost is $60 and includes a full day of GaAs reliabilty presentations, two breaks, luncheon, and copies of presentation summaries. Registration must be received by September 18, 1992 to ensure a luncheon reservation. To register, mail your name, address, and phone number to ElA/DEDEC, JC-50 Workshop, 2001 Pennsylvania Ave. NW, Washington, DC 20006 with a $60 check. Late registration will precede the Workshop from 7-8:30 am on October 4th. For more information contact general chairman, Anthony A. Immert at (315) 456-3514. |

Oct 7-9    | 3rd International Symposium                    | Research Triangle Park, NC |
| on Software Reliability Engineering               |                           |
| Contact: John C. Musson, Division of Computer Science, University of West Florida, Pensacola, FL 32514, Tel: (904) 474-2989 jmusson@dcs119.dcm.ofw.edu |

1993       | 16th International Symposium on Computer       | Rome, Italy                |
| Performance Modeling, Measurement and Evaluation |                           |
| Contact: North America: Dr. Stephen S. Lavenberg IBM TJ Watson Research Ctr., P.O. Box 704, Yorktown Heights, NY 10598, Tel: (914) 784-7573 KEurope & Others Prof. Giuseppe Gianella, University of Rome II, Electronic Engineering Dept., Viale della Ricerca Scientifico, 1-00173 - Roma - Italy, Tel: 39-6-79794866 |

Call For Papers
1992 Nov 4-6
IASTED
International
Association of Science and Technology for Development
International Conference on Reliability, Quality Control and Risk Assessment
Washington, D.C.
Survey papers and case studies are solicited on:
- Reliability
- Human Factors
- Risk Analysis
- Quality Costs
- Testing
- Fault Tolerance
- Simulation
- Software Safety
- Modeling
- Availability and Maintainability
Submit 3 copies (15 double spaced pages max.) by May 1, 1992.
Dr. Hoang Pham
Program Chairman
Idaho National Engineering Laboratory
P.O. Box 1605, MS 2406
Idaho Falls, ID 83415
Tel: (208)526-9274
Fax: (208)526-2930

April 1992
ADVANCED TECHNOLOGY WORKSHOP

Influence Of Temperature On Microelectronic Device Failure Mechanisms

August 25, 1992,
CALCE Electronics Packaging Research Center
University Of Maryland
College Park, MD 20742

In Cooperation With
U.S. Army, Ft. Monmouth, New Jersey
IEEE Reliability Society (IEEE)
International Society For Hybrid Microelectronics (ISHM)
International Electronic Packaging Society (IEPS)
Society For The Advancement Of Material And Process Engineering (SAMPE)

The workshop will focus on discussions on the following topics:
- Relevance of temperature in microelectronic reliability
- Discussion of failure mechanisms activated by temperature at equipment operating temperatures
- Relevance of steady state temperature in screening, qualification, and derating of ICs

Registration Fee
The registration fee is U.S. $60 which covers the cost of meeting room, facilities, breaks, lunch, and proceedings.

Accommodations
The workshop will be held at the Center of Adult Education, University of Maryland, College Park. A block of rooms will be reserved for participants. Information on other hotels in the area will be provided. The daily rate for these rooms range from $75 to $85.

Reliability Society Newsletter

RELIABILITY SOCIETY 30TH ANNUAL ALL DAY SEMINAR
BOSTON IEEE RELIABILITY CHAPTER
THURSDAY, APRIL 23, 1992
SHERATON TARA, ROUTE 9, FRAMINGHAM, MA

"Reliability Engineering: Alternative Techniques For Today's Business Environment"

In today's business environment where sales have slowed and present budgets are tight, many companies are approaching reliability in different ways. These companies still want to produce a reliable product but have been driven to optimize the cost effectiveness of their reliability programs. This has led to new techniques and approaches for achieving high reliability for less cost. This year's seminar seeks to present these new techniques over a diverse product range.

PAPERS TO BE PRESENTED WILL BE IN THE FOLLOWING AREAS:

- Reliability Predictions
- Warranties
- Software Reliability
- Reliability Growth
- AS THEY RELATE TO:
- FMEA
- CAD/CAE
- Stress Screening
- Automotive
- Military
- Medical
- Commercial Aircraft
- Consumer Electronics
- Computers
- Aerospace

REGISTRATION FEES: (fees include seminar, lunch, and dinner).
Prior to March 28, 1992: $150 IEEE members, $175 non-members
After March 28, 1992: $175 IEEE members, $200 non-members
NOTE: A $25 rebate issued to non-members who join the IEEE within a reasonable time.

Make checks payable to: Reliability Chapter of Boston IEEE Section
Mail checks and registration form to: Jim Kalchba
6 Ohio Road
Tyngsboro, MA 01879-2365

30TH ANNUAL ALL DAY RELIABILITY SEMINAR REGISTRATION FORM

Name ____________________________ Company/Affiliation ____________________________
Address __________________________ Town/City ____________________________
State/Zip __________________________ Phone # ____________________________
Amount Paid __________________ Date ____________________________ IEEE Number __________________

Seminar Proceedings available after April 23rd for $15 each. Call (617) 455-3394 for further information.

April 1992
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Reliability Society Newsletter
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