I have just returned from our quarterly Adcom meeting. The Spring meeting is always held in conjunction with the International Reliability Physics Symposium (IRPS). IRPS has been a very successful symposium every year. The Reliability Society jointly sponsors this meeting with the IEEE Election Devices Society.

At our Adcom meeting we plan the society sponsored conferences. There are three of them now. We review new R&M technology and address sundry administrative issues. I particularly enjoy the technical operations presentations. These presentations cover state of the art developments, specifications, and concerns on varied topics such as prediction, modeling human reliability, mechanical reliability and Computer Aided Logistics (CALS). If there is a topical area on which you would like to work with at the national level, please advise our VP, Technical Operations, Mr. Joe Gruessing. His address is on the back of the front cover. The Technical Operations area is the seed bed of committee work, conferences, bulletin boards, technical reports, etc.

NASA headquarters has expressed interest in having the Reliability Society provide some technical inputs into R&M requirements formulation for the Space Station program. I will have full details in July. If you have some interest in participation, please let me know.

I have been asked to head up an IEEE Quality Council that will have participation from 2/3 of the 36 IEEE societies. This is an embryonic activity and I will let you know about our direction in future newsletters.

I appreciate each of you. You are our "reason for being." I would welcome you submitting any brief technical topics for possible inclusion in the newsletter. One of my desires is to increase the technical value of the newsletter to our membership.

My best regards, as always.

Dr. Samuel Keene
Farewell Message From Departing Editors

As the Reliability Society Newsletter is turned over to Bruce Bream as new editor, we would like to take a moment to thank the Reliability Society membership and the AdCom members for their support during the seven years we have been associate editors of the publication. We truly hope that the Newsletter has been a valuable component of Reliability Society communications and that it has adequately met your needs. It was indeed our pleasure to make this contribution to the Society. We look forward to new challenges within the Society and the profession and trust that the many friendships created over the years will endure.

Sincerely,
Gary Kushner
Mark Snyder

New Reliability Society Newsletter Editor

The IEEE is pleased to announce the new editor of the this publication. Effective as of this issue, the editor of the Reliability Society Newsletter is Bruce Bream. His appointment to this position was confirmed by AdCom vote at the April 1991 meeting. Bruce is currently a reliability engineer for the NASA Lewis Research Center in Cleveland, Ohio. He has 11 years experience in reliability engineering with medical diagnostic systems, military contractors and the space program. His position at NASA involves reliability and maintainability assessment of the Space Station Freedom Electric Power System. His current focus is on computer simulation of maintenance resource demands. He received a bachelor's degree in Physics from Kent State University in 1973 and a Master's in Business Administration from Case Western Reserve University in 1988. He has been a member of the IEEE Reliability Society since 1982 and is an ASQC certified reliability and quality engineer (CRE/CQE). His hobbies include amateur radio, computers, flying, skiing and hiking. In his spare time he serves on a volunteer fire department and is looking forward to his new assignment as Newsletter editor.

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Reliability Society Newsletter Inputs

All RS newsletter inputs should be sent to Bruce Bream, Editor per the following schedule:

For January Newsletter: by October 25
For April Newsletter: by January 25
For July Newsletter: by April 25
For October Newsletter: by August 5

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Chapter Activities

Boston
With the summer approaching rapidly, the Boston Chapter's schedule is winding down while everyone involved takes a well-deserved vacation. The Lecture Series on Environmental Stress Screening (ESS) in late March and early April, while drawing only about 15 people, was very well received by all. The small turnout actually proved favorable because Gene Bridgers, our distinguished lecturer, was able to tailor his program nightly to cover areas of particular interest to the participants.

Technology Development Workshops continue making monthly progress on a guidebook to ESS issues and implementation. Interest levels have remained surprisingly high as the real work of writing has started.

The 29th Annual All-Day Reliability Seminar in April came off wonderfully. Willis J. Willoughby, Jr., Director of Product Integrity for the U.S. Navy, gave a very inspiring keynote address that brought to life our seminar theme of "Staying Competitive in the 90's: Reliability, Maintainability and Quality for a Changing World." The 60+ attendees heard an address fraught with sobering forecasts of U.S. illiteracy, workforce deskilling, and global competitive inadequacy in contrast to an increasing demanding and educated world-wide consumer. It's a myth to think the U.S. can become a service economy without U.S.-made products to service!

Eight other papers rounded out the day's events, all of which reinforced Mr. Willoughby's keynote. In addition, three other papers were accepted for publication in the proceedings but could not be presented due to time constraints.

In May, the chapter continued its social traditions by sponsoring an evening performance of "Steel Magnolias" on stage at the Nickerson Theater for members and guests. The performance was superb, and a good time was had by all.

Our monthly meeting program which ended in March (due to the April seminar), continues in September with a talk on Software Reliability Testing by Alex Elenrukh of Codex Cor-

Presentation to Mr. Willoughby by Boston chairman Don Markson and Seminar chairman Anita Cederholm.

Henry Goodman receives handshake from Boston chairman Donald Markson for his paper "Sitile Testing, A Method of Enhancing Reliability Growth."

Wills J. Willoughby presents Keynote address to the Boston Chapter 29th Annual Spring Reliability Seminar 1991.

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poration. This talk should be a good lead-in to the Full Lecture Series on Software Reliability starting in October.

This month rings in our new ofﬁcer slate with Gary Kushner of Digital Equipment Corp. at the helm, Ruth Evans of NEC as Vice Chair, Mike Johnson of RELEX (Mas.) as Secretary, and Anita Cederholm of Codex as Treasurer.

thanks to the past year’s chapter ofﬁcers and committee members who exempliﬁed the words diligence and teamwork. Particular thanks, however, go to the membership we have supported despite economic ills. We hope you all have a great summer!

Cleveland

The Cleveland Chapter has had 4 more meetings during this reporting period.

1. The annual mid-year social was held at the NASA LeRC Guerin House on December 17, 1990. Old friends and new members got together for an evening of relaxation, a cold buffet and 411. No speeches were given. Pong, ping-pong and dancing were enjoyed by many.

2. This meeting was on Fiber Optic Applications from the IEEE Learning Channel. Three experts: Dr. Tatsuki Iegami, Dr. Peer Kaiser and Dr. M.K. Barnius talked about:

a. Technologies for Fiber Optic Applications
b. Fiber to the Home and Factory
c. Building Blocks for the Information Age

3. We tried something new for our following meeting. Ruth and Bob English, retired well-known people in our area, took us on a marvelous Photo Essay of New Zealand. The material was excellent, informative and very well composed. All in attendance enjoyed the meeting.

4. NASA LeRC is celebrating its 50th anniversary. Our fourth meeting participated in this activity. Tom Hindshaw talked to us about what it was like to live in space. The Visitors’ Information Center auditorium allows for special effects that are very impressive. The hall was well ﬁlled. Some may even want to try it.

a. Partition has been assigned to the Technical Program committee of RAMS.

Bruce Bream will be helping with the editing activities of the R S Newsletter.

All in all, here in Cleveland, we are having fun serving our members and look forward to expanding activities in the future.

Regard,

Vince Lalli
Chairman

Cleveland Chapter

Dallas

The Dallas Chapter has had a full and successful year. Eight technical meetings were held on a wide variety of topics ranging from IC packaging criteria to Software Reliability to Concurrent Engineering to Super Conducting Super Collider Magnet Reliability. The Software Reliability meeting presented by Ralph Brettschneider of Motorola (Schaumburg, Illinois) had a standing room only crowd of nearly one hundred people, including many from the local SQA community. Our last meeting was held in May and concerned Soldier Joint Reliability of Fielded Equipment (a joint DOD/Industry study) and was presented by Jerry Coleman, Texas Instruments/Defense Systems and Electronics Group.

Lou Boudreaux, our local chapter’s leader in getting our chapter established and Chairman since the formation, was recognized for his contributions at the Dallas IEEE Section Awards Banquet by the local Reliability Society. Our thanks to Lou for his outstanding service.

The results of our election of new chapter ofﬁcers for 1991-1992 was provided at the April meeting and the new ofﬁcers were introduced:

Dennis Hoffman, Chairman
Julie England, Vice Chairman
Charles Watson, Secretary/Treasurer

We are looking forward to another great year with expanding participation by our Dallas Reliability/Maintainability community.

Los Angeles Chapter - Oct '90 Through Mar '91

We have had 3 technical meetings:

1. 10000 - C.E. Mandel of Screening Systems spoke on New ESS (Environmental Stress Screening) Finding and Techniques.
2. 11/90 - Dr. Glenn Ducat of Southern California Edison Co. spoke on the Latest Advances in the Electric Car.
3. 1/24/91 - Kam Wong of Kimber Corp. spoke on the New Approach to Failure Rate Predictions.
4. 2/28/91 - Tyrone Jackson of TRW spoke on Snak Circuit Analysis in the military area of Environmental, Design, and Reliability. Solohart spoke of the PC based SCA software tool they developed called SCAT.
5. 3/28/91 - Chuch Weibson of JPL spoke on the latest research on Robotics, and Prof. Lea of Brunel University spoke on the Associated String Processor (ASP) - A Massively Parallel Computing Technology.

A Design-Anti-countermeasure was conducted on Thermal Effects on Space Hardware. Mark Gabie of Gable Corp., and Lan Straton of Hughes Aircraft lectured on the rationale for packaging design and evaluation and thermal modeling.

Upcoming meetings/microuses include:

1. 4/1/91 - 4/16/91 - Tyrone Jackson is leading a minicourse on TQM Process and Product Improvement Discoveries. Topics will include TQM Lessons Learned by R. Lockwood (Space Systems Div.), Variability Reduction by R. Engellent (Hughes Aircraft), Cycle Time Management by A. Doggett (Hughes Aircraft), Quality Function Deployment by P. Wagh (Hults Hughes Aircraft), Taguchi Methods by S. Sugihara (Hughes Aircraft) and Statistical Process Control by S. Aber (Hughes Aircraft), Technical Risk Assessment by C. Orr (TRW), Concurrent Engineering by A. Edwards ( Edwards Associ.), and Mysteries of EEC Exposed by A. Rivera (Hughes Aircraft).
2. 4/25/91 - Larry Stern will speak on Software Project Management.
3. 5/30/91 - Dave Williams of TRW will lecture and demonstrate the latest in Computer Generated Mockups, Test and Screening Strategies, Computer-Aided Reliability Availability Analyses, Stress/Reliability and Availability Analyses, Stress Testing, Reliability and availability Analyses, Stress Testing.

a. 6/27/91 - R. Engellent of Hughes Aircraft will discuss Design of Experiments/Taguchi Methods.

b. 7/17/91 - R. Marloth of Hughes Aircraft will lecture on the latest development of Synthetic Aperture Radar.

Our Bulletin Board is very active with over 400 subscribed members. Membership is free. We offer meeting information, Jobline, E-Mail, Video Tape Exchange, Information Exchange, and Demos. Phone # is (818) 768-7644, 300-2400 Baud.

Loretta Arelanno
Los Angeles Chapter Chair

Philadelphia Chapter

In response to the Society’s Newsletter for the Chapter’s activities edition, below are the technical papers held for February and April. If you require additional information feel free to contact me.


Fulvio E. Oliveto, Chairperson
Philadelphia Chapter

Switzerland

The inaugural meeting of the Swiss section Reliability Chapter was held in Zurich on January 28, 1991. It was supported by a presentation signed by 70% of the Swiss Reliability Society mem-

bers of the IEEE Switzerland section. The Committee members:

Chairman: Alessandro Birolli
Vice Chairman: Giacomo Zardi
Secretary: Mauro Ciappa
Treasurer: Pierre Louis Boyer
Member: Federico Bonzago
Member: Ralph Brinkmann
Member: Rolf Leemann

The Chapter activities for 1991 are:

- Presentations on February 11: Failure sequences in power reactors (Dr. L. Mijeff, ETH Zurich), June 10: Emission microscopy (D. J. Kolzer, Siemens, Munich), June 17: Reliability of binary systems (Dr. B. Gerlach, Humboldt Univ., Berlin) and November 11: Computer program for reliability and availability computation of very large systems (R. Bernet, ETH Zurich).

- Courses on September 2-4: R&M of electronic systems (Prof. A. Birolli, ETH Zurich), September 9-10: VLSI-characterization and testability (W. Buchel, ETH Zurich), and September 11-12: VLSI failure mechanism analysis (M. Ciappa, ETH Zurich).

- Conference on September 26: Surface mount technology (impact on system reliability).

The Chapter cooperates with the Reliability Laboratory at the Swiss Federal Institute of Technology (ETH) Zurich (18 researchers, 4 MUs equipment, 30 industrial partners, activities see: Reliability/Availability, Failure A. Fault Analysis, Test and Screening Strategies, Computer-Aided Reliability Availability Analyses, Statistical Processes for Reliability). Contact: Professor A. Birolli, Reliability Laboratory, ETH Zurich, Tel +41 1 256 5148, Fax +41 1 251 21 72.

Twins City Reliability and Fault Tolerant Society

We thank our second year of broad reliability from system to components and both hardware and software. Failure analysis methods and procedures are a part of the regular regular.

We also explore how people have been using the results of reliability studies and failure analyses to drive corrective actions. Reliability is not a passive exercise.

Practical examples of reliability engineering and application are the rule for our activities. Too often "reliability" has been perceived as an excuse for presenting his mathematical models that have limited practical application or insufficient detail to allow implementation. This is not the case for our society.

The data we collect is intended to provide non-reliability specialists to evaluate the value of the reliability outputs they are receiving. Examples of this include: "What to Look for in Supplier Reliability Reports," "What a Complete Failure Analysis Report Should Include," "Is your Burn-in Program Effective?" and "Reliability Testing in the 90s."

Regular attendees at our meetings understand how system reliability requirements are developed, how system requirements are translated into requirements for subsystems and components, how to verify performance against requirements, and what methods are available to improve reliability.
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ASSURANCE TECHNOLOGIES – DISCOVERING NEW HORIZONS

1992
Annual RELIABILITY AND MAINTAINABILITY Symposium
1992 January 21-23
Riviera Hotel
Las Vegas, Nevada USA

Telecomputing, industrial globalization, technology transfer, and multinational joint ventures are just a few of the activities which will be accelerated in the new world economy. Corporate as well as governmental procurements and R&D decisions in a world economy will be significantly influenced by issues such as best value, market share, concurrent engineering, and product quality. The assurance technologies must be prepared to adapt to this changing environment. The development of pioneering assurance technologies or modification of proven ones must address cost-effective solutions to meet these contemporary challenges. To encourage your colleagues to expand their horizons, your paper should advance our knowledge of pioneering assurance methods or enhance our understanding of established techniques. Papers stressing application to real-world challenges will receive priority consideration. Papers in the following categories or types of subjects are solicited:

TECHNOLOGY

CAD/CAM/CAT/CALES
Design to Life-Cycle Cost
Modeling & Simulation Methods
Software Tools & R&D Safety
R&D Test & Demonstration
Reliability Growth
Screening and Failure Analysis
FMEA and RMHEA
Built-In-Test & Testability
Cost-Case Analysis & Prediction
Fault Trees & Diagnosing
Techniques
Repair/Maintenance
Methods
R&D Cost-Benefit Analyses
Software Safety and R&D
Environmental Testing
Sneak Circuit Analysis

MANAGEMENT

CAD/CAM/CAT/CALES
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System Effectiveness
R&D Contracting Management
R&D Requirements
Trend Analysis and Risk
Management
Database Management
R&D Cost-Benefit Tradeoffs
Testing Effectiveness
Warranties/Guarantees
Logistics Support
Multinational & International
Programs
Reliability-Growth Management
Product Assurance Management
Safety Management
Training and Education

INDUSTRY APPLICATIONS AND LESSONS LEARNED

Aerospace & Defense
Electric Power & Other Utilities
Oil & Other Resource Industries
Mechanical Structures Equipment
Transportation Methods and
Systems
Microelectronics
Computer Hardware & Peripherals
Software and Simulation
Robotics and Artificial Intelligence
Consumer Products
Medical and Biotechnology
Communication Systems
Office Automation & Database
Systems
Electrical & Electronic Systems
Telecomputing and Networks
Chemical and Agricultural
Systems

The P.K. McElroy Award

The P.K. McElroy Award recognizes the best combination of the technical paper and its presentation. All submitted papers are graded by the Program Committee. The top contenders are selected and their presentations at the Symposium are monitored by a group of past General Chairman. The author(s) of the winning paper is recognized at the next Symposium and receives a plaque, a $1000 honorarium, and gratis registration.

RAMS is a nonprofit symposium sponsored by the following Societies:

ASQC  I  IIE  I IEEE  I SOLE  I IES  I AIAA  I SSS  I SRE

For contact information see Conference Calendar.

July 1991
Reliability Standard on Industrial and Commercial Power Systems

IEEE Standard No. 493-1990 "Recommended Practice for Design of Reliable Industrial and Commercial Power Systems" has just come off the press. This 350 page revision to the 1980 "Gold Book" contains considerable new equipment reliability data. IEEE Survey data from industrial/commercial installations include: power transformers, rectifier transformers, circuit breakers, motors, motor starters, disconnect switches, switchgear bus, bus duct, open wire, cable, cable joints, cable terminations, generators in continuous service, and emergency and standby generators. Other surveys include: Diesel and gas turbine generating units 600-1,800 kW, electric utility data on underground cable, splices, terminations, and high voltage circuit breakers above 63 kV.

Chapters include planning and design, examples of reliability analysis, economic evaluation of reliability, electrical preventive maintenance, improving reliability of an existing plant, and emergency and standby power. IEEE members can obtain copies of IEEE Std. 493-1990 for $32.20 from the IEEE Standards Office, 445 Hoes Lane, Piscataway, N.J. 08855-1331 ($46.00 for non-members).

C. R. Heising April 3, 1991

Conference Calendar (continued)

<table>
<thead>
<tr>
<th>DATE</th>
<th>CONFERENCE</th>
<th>PLACE</th>
<th>CONTACT</th>
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<tbody>
<tr>
<td>Oct. 1-2</td>
<td>Reliability and Safety of Processes and Manufacturing Systems</td>
<td>Tampere, Finland</td>
<td>Yngve Malmen Technical Research Centre of Finland (VTT) 22313 tel/fax (Telex)</td>
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<tr>
<td>Oct. 1-3</td>
<td>SRE Symposium 1991</td>
<td>Tampere, Finland</td>
<td>Yngve Malmen Technical Research Centre of Finland (VTT) 22313 tel/fax (Telex)</td>
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<td>+358 31 163 276 (Phone) +358 31 163 495 (Fax)</td>
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<tr>
<td>Nov. 11-15</td>
<td>Third International Symposium on the Physical and Failure Analysis of Integrated Circuits</td>
<td>Singapore</td>
<td>IPFIA 91 Technical Program IEEE Singapore Section 16A Science Park Drive #03-03 The Pascal Singapore Science Park Singapore 0511</td>
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<td>Tel: 773-0056 Fax: 773-0054</td>
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<tr>
<td>Dec. 20</td>
<td>International Conference on Safety</td>
<td>Tokyo, Japan</td>
<td>Dr. Y. Suzuki Tokyo Metropolitan Institute of Technology 6-6 Asahigaoka, Hino-City Tokyo 191 Japan</td>
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<tr>
<td>Call for Papers</td>
<td>European Safety and Reliability 92</td>
<td>Copenhagen, Denmark</td>
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<td>Jun. 10-12</td>
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