

RELIABILITY SOCIETY

NEWSLETTER



Editor: Naomi J. McAfee

Vol. 26, No. 4, October 1980

President's Message on EUROCON '82



Nine years ago the first IEEE sponsored European Conference on Electronics (EUROCON) was held in Lausanne, Switzerland. It established many "firsts" among which was an excellent technical program held in a superb convention facility. It was a memorable event for those fortunate to participate in its proceedings as well as for those

who contributed to its competent management. Having a prototype for conference excellence to emulate, there followed the EUROCON '74 in Amsterdam, EUROCON 77 in Venice, and EUROCON '80 in Stuttgart each aiming higher still for excellence. The fifth EUROCON is scheduled for June 14-18, 1982 in Copenhagen, Denmark. Judging by the thoroughness of the Conference plans, the composition of the Steering Committee and the solid backing of the European professional societies, the Conference portends to be the very best yet of the EUROCON'S. Furthermore, this Conference will set another "first" in that it will be the first EUROCON whose theme will be devoted entirely to Reliability; specifically to RELIABILITY IN ELECTRICAL AND ELECTRONIC COMPONENTS AND SYSTEMS.

Reliability Society has more than cursory interest in EUROCON '82. It has an obligation of commitment to its success. This obligation is implied in one of the objectives of the Society, namely to propagate the Reliability discipline through activities which are scientific, literary and educational in character. All three are soundly imbedded in EUROCON '82.

The President's message is invariably reserved for Society's priority matters. I consider the EUROCON '82 a high priority matter and urge our membership to lend professional support to this Conference. One form of such support is to attend the Conference as U.S. Delegate; another is to submit an original, user orientated, theoretical or tutorial type paper on such topics as: Reliability theory, reliability of components and assemblies; hardware system reliability; software system reliability, man-machine system reliability, computer systems reliability, communications systems reliability; reliability testing and measurements, reliability demonstration, reliability as marketing factor and other topics in like vein. A single page abstract is deadlined for 1 December 1980. It can be sent to me or to the Chairman of the Technical Program Dr. Peter W. Becker, Electronics Laboratory, DTH Bldg 344, DK-2800 Lyngby, Denmark. Dr. Becker, author of the highly successful text "Design of Systems And Circuits for Maximum Reliability and Production Yield," is a strong supporter and a long standing member of the Reliability Society, distinguished contributor to the pages of our Reliability Transactions, and as referee, a member of the editorial board.

We salute the management team of EUROCON '82; the Conference Chairman Dr. Erik Lauger, Conference Vice-Chairman Professor W.E. Proebster, Technical Program Chairman Dr. Peter W. Becker, and Technical Program Vice-Chairman Professor W. Kaiser. We are confident that in the hands of this highly professional and expert team EUROCON '82 will be an unexcelled success.

DR. THADDEUS L. REGULINSKI
President Reliability Society

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Deadline for January 1981 Issue November 1, 1980.

Chapter News

Report From the Chapters Chairman - Henry Malec

New Chapter - Denver, Colorado

It all started with an ad in the October, 1978 Reliability Society Newsletter - WANTED - Reliability society members to join or form area chapters . . . Sam Keene of Boulder responded to the ad and on June 5, 1980, a new reliability society chapter the Denver Chapter was officially designated with Sam Keene as the 1st chairman. On September 4, 1980, the Reliability Society Ad Com held its meeting in Denver to commemorate this event. The Denver Reliability Society was presented with its charter by President Regulinski. I would like to thank all of you that participated with Sam and me in the forming of the new Denver Reliability Society Chapter. The members who signed the application for charter are:

John R. Adams
4 Mile Canyon-Salina Rt
Boulder, CO 80302

P. Spencer Elliott
2931 Tumbleweed Ln
Fort Collins, CO 80526

Werner O. Hausmann
3531 Florida Dr
Loveland, CO 80537

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106 De France Way
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Box 1702
Boulder, CO 80306

R.M. Wainwright
3715 S. Niagara Way
Denver, CO 80237

Samuel J. Keene, Jr.
Intl Business Machines
Dept 58R Bldg 910
PO Box 1900
Boulder, CO 80302

Craig A. Walter
2909 Alamosa Ct.
Loveland, CO 80537

Also Charter Signatures
(From Pikes Peak
Section)

Jack M. Watson
Ronald L. Watts

Los Angeles

A lively discussion followed panel presentations on software reliability current trends at the National Computer Conference at Anaheim California. This panel, which was organized by Myron Lipow of TRW and the IEEE Reliability Chapter consisted of: Messrs. B. Littlewood, City Univ. of London, J. McKissick of G.E., I. Doshay of TRW, R. Jensen of Hughes and R. Mills of TRW. The utility and appropriateness of Software Reliability Modeling were issues that evoked much comment. The audience consisted, for the most part, of pragmatic computer software practitioners. Most of these attendees had contrary views on the subject. However, a balanced set of arguments may be

heard in the tape recordings that were made of the entire session by AFIPS. Myron Lipow introduced this session by stating:

" At this time I think we have gotten over the hurdle of having to show that the concept of software reliability is a viable one. From the user's point of view, failure of the system due to incorrectly designed or coded software has an impact on resources needed to correct the problem, not to mention the possible catastrophic consequences of a failure.

" Experience has shown that software failures which reflect original design weaknesses continue to occur unexpectedly throughout the operational life of the system. Consequently system reliability requirements must be allocated to both hardware and software components of the system in order to act as a forcing function on design of reliable software. This is not the only forcing function however. For example, the United States Department of Defense, in recognition of the substantial challenge of fault-containing computer software upon economical operational use of a military system, issued a military specification on "Software Quality Assurance Program Requirements" to meet this challenge.

" The panel session members here today will address a spectrum of issues, which include numerical software reliability measurement, design of reliable software, the role of the programmer in development of reliable software, hardware/software reliability and maintainability relationships, and, finally, quality assurance for reliable software.

" The presentations will be made from the viewpoint of current status and trends in these most important areas. I am sure that the panelists will stimulate your thoughts on the subject of software reliability; I particularly hope we will all gain some insights from your questions of the panelists and their answers."

Chapter Officers Survey

Letters were sent in July, 1980 to the 1979/1980 Chapter Chairman requesting a list of the chapter officers for the 1980/1981 chapter activities year. If you have not yet responded, please respond so that the chapters communications channels can be aligned.

WANTED IN TEXAS

Reliability Group members to join or form area chapters in the Dallas and Houston areas. You do not presently have an area Reliability Society chapter even though you have highly regarded reliability specialists in the area. If you would like to help form a chapter, please contact Hank Malec, Chapters Activities Chairman at the ITT - Advanced Technology Center, 1 Research Drive, Shelton, CT 06484 or call (203)929-7341 Ext. 817.

Mid-Term Report from IEEE's Congressional Science and Engineering Fellow

Thomas L. Fagan

Reliability Society

Participating in this very worthwhile program has been a wonderful experience for me. I have learned how the Congressional system operates, where the pressure points are and how things get done in a very fast-paced, hectic environment. At the same time I feel that I have played a significant role in some important legislative activities.

GENERAL RESPONSIBILITIES

Following my appointment to the personal staff of Senator Strom Thurmond (R-SC) as a Special Assistant for Defense, I have been assigned to the Senate Armed Services Committee. I am responsible overall, for the Subcommittee on General Procurement. This has allowed me to span all of the services and become involved in many major programs such as MX, CX cargo aircraft, LAMPS ASW helicopters, Army end-strength, draft registration, Navy shipbuilding, XM-1 tank, and a host of other programs.

In addition to this broad responsibility, I have given Senator Thurmond legislative support on the Arms Control and Military Construction and Stockpiles Subcommittees.

Although I spent the entire month of December preparing for the debate on the SALT II Treaty, the Soviet invasion of Afghanistan led to the setting aside of the Treaty by the Senate at the request of President Carter. Thus, there has been little activity by the Arms Control Subcommittee.

In the Military Construction and Stockpiles Subcommittee, I was involved only in the Air Force supplemental request to cover cost growth for the Vandenberg Space Shuttle launch complex.

MAJOR ACCOMPLISHMENTS

My major accomplishments during the first six months were:

- 1) generating Amendment No. 1691 to the Defense Authorization Bill to add \$255 Million for the re-activation of the Battleship New Jersey and;
- 2) the creation of a new GI Bill of Education, S. 2977.

On these two issues I handled all aspects of the work including the legislative research, amendment/bill preparation, presentations to the Armed Services Committee, support for the Congressional hearings, interface with the Pentagon, "Dear Colleague" letters, support for the mark-up and floor debate, and briefings for key staffers and Senators.

The re-activation of the New Jersey was approved in the Senate Armed Services Committee mark-up by a vote of 11 to 5. A floor amendment to delete the New Jersey re-activation was defeated 51-40. Senator Thurmond played an active role in both the Committee and floor fight to provide unbudgeted funds for this ship re-activation.

The new legislation for the GI Bill of Education involved similar efforts but still awaits Veterans Affairs Committee action. Its major features include:

- An Educational Stipend of \$400 per month up to a maximum of 36 months.

- Eligibility to active duty personnel after two years of service and members of the Selected Reserve after four years of service.
- Transfer of entitlement to dependents by servicemembers after 8 years of service.
- A 10-year time period after discharge for servicemembers to utilize their benefits.

CONGRESSIONAL HEARINGS

In support of the Senate Armed Services Committee, Subcommittee on General Procurement, I attended and supported over 30 Congressional Hearings. I found that one aspect of the job which is great fun is the generation of 6 to 10 questions for each of the witnesses. During the hearings, you have the opportunity to sit behind the Senator and follow-up on the questions or steer the dialog along a particular course in real-time. Witnesses for whom I prepared questions are listed in the following Table.

TABLE I. WITNESSES

- General David C. Jones* Chairman, Joint Chiefs of staff
- Admiral Stansfield Turner* Director, CIA
- Admiral Thomas B. Hayward* Chief of Naval Operations
- William J. Perry, Under Secretary of Defense, R&E
- General Lew Allen* Chief of Staff, USAF
- Hans Mark, Secretary of the Air Force
- Percy A. Pierre, Assistant Secretary of the Army, RD&A
- Dr. Harold Brown* Secretary of Defense
- W. Graham Claytor, Deputy Secretary of Defense
- George Marienthal, Deputy Assistant Secretary of Defense, Energy, Environment & Safety
- Lt. General Paul X. Kelley, Commander Rapid Deployment Force
- Vice Admiral Charles H. Griffiths, Deputy Chief of Naval Operations
- General Richard H. Ellis, Commander-In-Chief, Strategic Air Command
- Major General John T. Guice, Director, Air National Guard
- Major General Richard Bodycombe, Chief of Air Force Reserve
- General Robert H. Barrow* Commandant of the Marine Corps
- General Vincent T. Blaz, Marine Reserve Chief
- General Edward C. Meyer* Chief of Staff, U.S. Army
- Major General William Berkman, Chief of Army Reserve
- Vitalij Garber, Deputy Undersecretary of Defense, International Programs and Technology
- Lawrence J. Brady, Deputy Director, Office of Export Administration, Department of Commerce
- Sharon B. Connally, Director Compliance Division, Office of Export Administration, Department of Commerce
- Admiral Harry D. Train* Commander, Atlantic Fleet
- General Bernard W. Rogers, Supreme Allied Commander - Europe
- John R. Macy, Director, Federal Emergency Management Agency

- Ambassador Robert Komer, Under Secretary of Defense for Policy

The job of Congressional Fellow entails an enormous amount of reading and writing. Over twenty floor statements were written by me which Senator Thurmond gave on the floor of the Senate. These floor statements are listed in Table II.

TABLE II. FLOOR STATEMENTS WRITTEN FOR SENATOR THURMOND

- "The Soviet Buildup In Cuba"
- "Technology Transfer To The Soviets" ++
- "Position on FY'81 Defense Authorization Bill"
- "Cuban Refugee Situation"
- "Comments On President Carter's Letter To Senator Stennis Suggesting Cuts In The FY'81 Defense Budget"
- "The Need For Increased Defense Spending"
- "The Iran Rescue Attempt"
- "Marxist Expansion In Central America"
- "Re-activating the Battleship New Jersey"
- "Strife in El Salvador"
- "Military Pay For The Armed Services"
- "The Purpose Of The Soviet Cuba Mission"
- "Defense And Foreign Affairs"
- "The American Hostage Situation In Iran"
- "Cuban Dissidents In Peruvian Embassy in Havana"
- "President Carter's Pledge To Increase Defense Spending"
- "World Population Growth And National Security"
- "Carter Administration Defense Budget"
- "The Military Retention Problem"
- "The UN Moon Treaty"

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- * Multiple hearings
 - ++ Reprinted in Vital Speeches Of The Day. Of particular note was the publication by Vital Speeches Of The Day, a national news magazine, of this speech which I prepared under the direction of Senator Thurmond. The Senator advised me that of all the speeches he gave, only 1 or 2 a year are usually published by this widely read magazine.

LETTERS AND SPEECHES

I was also asked to compose numerous official letters for Senator Thurmond as well as several speeches/articles. These appear in the following tables.

TABLE III. PERSONAL LETTERS FOR SENATOR THURMOND

- Letter to President Carter condemning his personal decision not to invite Chile to participate in the 21st Annual UNITAS Naval exercises, although Chile has participated each of the past 20 years.
- Letter to Secretary of Defense Harold Brown regarding Military Pay.
- Letter to President Carter regarding Technology Transfer To The Soviets.
- Letter to President Carter regarding the sale of oil drilling technology to the Soviet Union.
- Letter to General Alexander Haig, ret.,

- President UTC regarding UN Moon Treaty.
- Letter to Secretary of Defense Harold Brown regarding Industrial Preparedness.
- Letter to Secretary of State Cyrus Vance regarding UN Moon Treaty
- Letter to President Carter recommending Assurance Science Specialist be appointed to the Nuclear Safety Oversight Committee

TABLE IV. SPEECHES/ARTICLES WRITTEN FOR SENATOR THURMOND

- "Today's Defense Status" speech given to top 40 Republican Contributors, Russell Senate Office Building, June 9, 1980.
- "Changing Our Trade Policy With The USSR" printed in Vital Speeches Of The Day, April 15, 1980.
- "Should the U.S. Go All Out For Civil Defense?" published in American Legion Magazine, May, 1980 issue.
- "Acceptance Speech" at 1980 National Convention of the Navy League upon receiving the League's highest award, the Meritorious Citation, at Sheraton Park Hotel, April 8, 1980.
- "Trade With The Soviet Union" radio speech, March 14, 1980.

PERSONAL SPEECHES

I have given two personal speeches of my own during this time period. The first was as the after-dinner speaker on May 21, 1980, at NASA Goddard Space Flight Center for the IEEE Aerospace and Electronic Systems Society Spring Meeting. The second was on June 6, 1980, to the IEEE, United States Activities Board, Professional Activities Committee Meeting at the Crystal City Marriott.

I also give short briefings on the Congressional Science and Engineering Fellows Program on a regular monthly basis to Congressional pages, interns, and scout groups.

FELLOWS SEMINARS

The American Association For The Advancement of Science, which coordinates the Congressional Science and Engineering Fellows Program, held Fellows Seminars every two weeks. My own seminar was held at the COSMOS Club on the Space Shuttle Program with Dr. Mike Malkin, Shuttle Program Manager as the keynote speaker.

SPECIAL STUDIES

I have been asked to perform quite a number of quick-reaction special studies. The most significant of these have been:

- XM-1 Tank Thermal Signature Analysis
- NATO vs. Warsaw Pact Forces
- A-10 Aircraft, single seat vs. dual seat configuration analysis
- Fighter aircraft production and availability (mission capable) rates
- Battleship New Jersey cost benefit analysis
- Aircraft Carrier Oriskany cost benefit analysis
- Economic effects of Soviet trade embargo
- Soviet expansion activities since WWII
- Soviet violations of the SALT I Treaty
- Analysis of Soviet payments for grain and high technology
- Impact of SALT II Treaty concessions/agreements on verification of treaty terms
- Treaties the Soviets have violated since WWII other than SALT I

LOBBYISTS

My impression of lobbyists has changed drastically since starting this assignment.

Lobbyists serve a very useful role and are well received by Members of Congress. They generally provide sound factual data and offer their perspectives. In order not to destroy their credibility for future return visits on other issues, the reliability and accuracy of their data is extremely high. I have received visits and presentations from the following organizations, all of whom were supporting programs, issues, or funding:

Pentagon, XM-1 Tank
Pentagon, CX aircraft
Pentagon, MX
Pentagon, Navy Shipbuilding
Kaman Aerospace
Pratt & Whitney
GE (engines, aerospace, lamps)
Lockheed Missile & Space Co.
Boeing
Midvale Steel Co.
O'Connor Creative Systems
US Army - MICOM, HEL
US Army - BMDATC, LOADS
Harris
Aerocouncil, Inc.
General Atomic Co.
Civil Defense Auxiliary
Grumman
WPAFB-ASD
U. of Miami, Advanced International
Studies Institute
Institute on Strategic Trade
W.J. Schaffer, Assoc.

PRESS RELEASES

Although Senator Thurmond has his own Press Secretary, I have been called upon 5 times to write press releases. These releases were on the following subjects:

- Re-activation of the Battleship New Jersey
- Soviet Trade
- Soviet Invasion of Afghanistan
- GI Bill of Education
- Trainee Transfers to Fort Jackson, South Carolina

OFFICIAL TRIPS

I have been fortunate enough to make several very interesting trips. These were:

- A three day symposium on "How To Negotiate With The Soviets" held at the University of South Carolina, Institute of International Studies. The symposium centered around three case studies each led by the Chief Negotiator for the Nuclear Test Ban Treaty, The Mutual and Balanced Force Reduction Treaty, and SALT II.
- A three day orientation trip with the Army to Ft. Jackson, S.C. and Ft. Benning, Georgia. The purpose of this trip was to interview recruits and NCO's on military pay, retention, and morale problems; receive briefings; witness weapon demonstrations; and tour training facilities. We participated in many hands-on activities, the highlight being the opportunity to make two parachute jumps at Fort Benning.
- A two day visit with the Navy to Norfolk, Virginia. The purpose was the same as the Army trip and also included lunch on the NIMITZ; demonstrations of the Harrier AV-8B and F-14 aircraft; tours of the MISSISSIPPI (guided missile cruiser), SIPAN (amphibious landing craft), and FINBACK (nuclear attack submarine).
- A three day trip to the 1980 Annual Reliability and Maintainability Symposium in the capacity of Secretary-Treasurer of the Symposium.

RECEPTIONS

Senator Thurmond asked me to attend a number of receptions as his representative:

- Secretary of the Navy, Mr. Hidalgo
- Embassy of Chile
- American Legion
- General Electric
- Pratt and Whitney
- IEEE
- Retail/Corporate Credit Associations
- American Paper Institute
- South Carolina Cherry Blossom Festival Reception
- I also attended two receptions at Senator Thurmond's home, McLean, Virginia

OTHER (MISCELLANEOUS)

In addition to the Armed Services General Procurement Subcommittee, Senator Thurmond has assigned me responsibility for certain other issues. These include:

- UN Moon Treaty
- Vinson-Trammell Act
- Industrial Preparedness
- Civil Defense
- Draft Registration
- High Technology Sales to Soviets

Also, I have attended a White House Briefing on Draft Registration and answered various press inquiries on defense issues. I am doing one piece of case-work for the Midvale Steel Company in Philadelphia, Pennsylvania to secure a declaration of essentiality from the U.S. Navy for heavy forging capability, followed by a loan guarantee under the Defense Production Act of 1950 from OSD.

I have received highly classified CIA briefings on the Soviet Union El Salvadore, Chile, and Nicaragua.

I prepared in real-time, on the Senate floor, a 2nd degree amendment to Senator Helms' Amendment to the FY'81 Foreign Assistance Bill regarding safeguards for Technology Transfer to the Soviets.

In February, I received the IEEE Philadelphia Section Past Chairmans Award.

Finally, I attend the Senator's staff meetings, as they occur.

RECOMMENDATIONS

As I stated in the beginning, the Congressional Science and Engineering Fellows Program is a very worthwhile program. I wish that each IEEE member could share this experience and I would recommend the program highly to all of those who have any interest in the program.

I basically have only two recommendations to make. First, I encourage the IEEE Fellows Selection Committee to give serious consideration to any candidates from the Power Engineering Society. The energy area needs considerable help and sorting-out as there are over fifteen subcommittees in the Congress trying to make some sense and plans in this important area.

Second, I believe there are several IEEE Groups and Societies which would be willing to contribute funds to the Fellows Program if they were allowed to participate in the selection process as an observer/advisor with non-voting status. Speaking for the Reliability Society, I know that they would be willing to contribute funds if such an arrangement could be made.

ACKNOWLEDGEMENT

I was extremely fortunate in finding a position on Senator Thurmond's staff. I have excellent access to the Senator and his background and experience have been invaluable.

I could not have found a better place in the Senate that would have given me more latitude and flexibility to participate in the Fellows Program and produce some meaningful results.

I owe a large debt of gratitude to my

mentor, Mr. Edward B. Kenney, a veteran professional staff member of 19 years, whose guidance and direction has helped immeasurably in accomplishing the tasks listed in this mid-term report.

Calls for Papers

IEEE TRANSACTIONS ON RELIABILITY SPECIAL ISSUE ON RELIABILITY OF SOLAR ENERGY DEVICES AND SYSTEMS

The Editorial Board is planning a special issue on the Reliability of Solar Energy Devices and Systems. Previously unpublished papers on all reliability aspects of solar-based electric power generation will be considered. Papers related to terrestrial applications of photovoltaics are particularly encouraged. Suggested topic areas include:

- . Material Considerations
- . Failure Mechanisms
- . Design for Maintainability
- . Environmental Testing
- . Case Histories
- . Comparative Assessments

The schedule for this special issue is as follows:

- . Author's Letter of Commitment - January 15, 1981
- . Submission of Manuscript - April 15, 1981
- . Submission of Revised Manuscript - July 1, 1981
- . Submission of Special Issue to Editor - August 1, 1981
- . Publication of Special Issue - January 1, 1982

Letters of inquiry, letters of commitment and complete manuscripts should be submitted to the guest editor:

Professor Ronald J. Gutmann
Electrical and Systems Engineering
Department
Rensselaer Polytechnic Institute
Troy, New York 12181
(518) 270-6486

1981 INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM

April 7-9, 1981 - Sheraton - Twin Towers - Orlando, Florida

The Nineteenth Annual Symposium, co-sponsored by the IEEE Reliability and Electron Devices Societies, emphasizes reliability physics as the link between part reliability and part design and process technology.

The 1981 Symposium will emphasize the reliability physics of LSI and VLSI devices from design through processing, packaging and testing. 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 for component failure.
 - . Failure Analysis - Techniques for diagnosis and analysis of specific problems, especially in VLSI and LSI.
 - . Accelerated Testing and Screening - Emphasizing the physical mechanisms which validate testing and screening techniques.
 - . Design for Reliability - Relating requirements and solutions in unique applications such as medical or automotive electronics.
 - . Process Control for Reliability - Relating process control to device reliability.
- In the following or related areas:
- . VLSI - Electrical Analysis and Reduced Geometric Effects
 - . LSI - All MOS and Bipolar Technologies
 - . Semiconductor/Insulator Interfaces, Contacts, Metallization, Surface Effects
 - . Linear, Microwave, Optoelectronic Devices
 - . Packaging - Bonding, Die Attach, Coatings, Encapsulation
 - . Hybrids - Materials, Components, Manufacturing Processes
 - . Displays, Sensors, Solar Cells
 - . Passive Components, Discrete Components
 - . New Devices, New Technology

For information contact:

Dr. John Edwards, General Chairman
1981 International Reliability Physics Symposium
American Microsystems, Inc.
3800 Homestead Road
Santa Clara, CA 95051
Tel: (408) 246-0330, ext. 260

Announcements

WORKSHOP ON SOFTWARE RELIABILITY ASSESSMENT

A limited attendance workshop is being organized by the Data and Analysis Center for Software (DACS) to review and provide recommendations for improvements to a software reliability guidebook being developed by the Rome Air Development Center.

This guidebook is similar to MIL-STD-781 and will be used for specifying and assessing software reliability requirements. This guidebook emphasizes two main applications, 1) reliability assessments performed during formal testing as a means of monitoring the status of software testing and, 2) reliability assessments performed to formally qualify a software system prior to operational usage.

For example, to assess testing status, the following points are addressed in the guidebook:

1. Guidance as to the class or classes of software reliability models most applicable for project type
2. Types of data needed to be collected and sample data acquisition forms
3. Criteria for determining error and failure severity
4. When to begin collecting data and applying the model
5. How to interpret model outputs

A draft guidebook is available for distribution and comment. RADAC is encouraging wide distribution of this draft to insure that the resultant handbook will be of the greatest utility to software engineers and nontechnical managers responsible for performing software reliability assessments.

For further information on obtaining this draft guidebook contact:

A. Sukert
RADAC/ISIS
Griffiss AFB, NY 13441
315/330-3851

A paper describing this guidebook entitled "A Guidebook for Software Reliability Assessment," is included in the January, 1980, Proceedings Annual Reliability and Maintainability Symposium. A copy of the Proceedings at \$24 per copy can be obtained from

Evans Associates
804 Vickers Avenue
Durham, NC 27701

The workshop will be held October 7-9, 1980 in Rome, New York. Attendance will be limited to those individuals showing evidence of activity in the field of software reliability assessment and willingness to contribute to a review of the guidebook. For more information on this workshop contact:

L. Duvall
Data and Analysis Center for Software
RADAC/ISIS
Griffiss AFB, NY 13441
(315)336-0937

SCREENING GUIDELINES MANUAL

The Institute of Environmental Sciences will publish a Screening Guidelines Manual in the fall of 1981. This is the result of several workshops held by the IES and ESSEH (Environmental Stress Screening Electronic Hardware).

The guidelines will cover such areas as 1) cost tradeoffs; 2) piece parts; 3) modules, units and systems; 4) glossary of terms; 5) industry survey.

For further information contact: Institute of Environmental Sciences, 940 East Northwest Highway, Mt. Prospect, Illinois 60056.

PLP-80

The 11th Annual Product Liability Prevention Conference was held September 22-24, 1980 in Washington, D.C. Proceedings of the Conference are available and are free to the first 100 Reliability Society members requesting copies. To qualify you must include your membership number. Write:

Richard M. Jacobs, P.E.
PLP-80
23 Rumson Road
Livingston, NJ 07039

MINUTEMAN CORROSION SYMPOSIUM

The Minuteman Corrosion Symposium will be November 20, 1980 at Cottage Crest Restaurant, Waltham, MA. Jointly sponsored by the Boston Reliability Chapter of IEEE and the Boston Section of the National Association of Corrosion Engineers - this symposium will provide an in depth look at electronic corrosion problems and methods of coping with them.

The program will cover: the basic fundamentals of corrosion associated with electronics.

A survey of the "real world" environments that electronics must survive in. A look at the sometimes devastating effects of moisture on electronic circuitry. The importance of proper component and materials selection. Corrosion consideration at the assembly level - soldering; fluxes; cleaning. Protection at the operating unit level, both from the military and industrial standpoint.

A round table discussion based on problems proposed by the attendees. Registration fee NACE-IEEE members \$85.00. Non-members \$95.00 (\$10.00 of the registration fee may be applied towards membership in either NACE or IEEE).

A \$10.00 discount will be allowed for any preregistration received before October 31, 1980.

Registration will include both lunch and dinner as well as morning and afternoon refreshments.

Further information may be obtained from:

Mr. John A. McGuiness
New England Power Service Co.
939 Southbridge Street
Worcester, Mass. 01610
Telephone (617)791-8511

Registration should be mailed to:

Ms. Susan Eames
Data General Corp.
Rt. 9
Westboro, Mass. 01580

FLEET RELIABILITY AND MAINTENANCE WORKSHOP

The Institution of Engineers (India) will sponsor a two day workshop and a one day seminar on Fleet Reliability and Maintenance, December 4-6, 1980 at Bangalore, India. Interested individuals should contact either:

Wg Cdr R Krishnan
National Convenor
C/O Institution of Engineers (India)
Karnataka State Centre
No. 3 Vidhana Veedhi
Bangalore-560 001

or

Sqn Ldr Dr K Ramchand
National Convenor
C/O Institution of Engineers (India)
Kanpur Sub-Centre
44, Navin Market, Kanpur 208 001

THE 18TH ANNUAL RELIABILITY ENGINEERING AND MANAGEMENT INSTITUTE

The 18th Annual Reliability Engineering and Management Institute will be held November 10-14, 1980 at the University of Arizona. Fees for the institute are \$575. For information contact:

Dr. Dimitri Kececioglu, Director
Reliability Testing Institute
Aerospace & Mechanical Engineering
Department
Building No. 16, Room 200B
The University of Arizona
Tucson, Arizona 85721
or call (602)626-2495 or 626-3901

1981 Awards Luncheon

The 1981 Reliability Society Awards Luncheon will be held during the Reliability and Maintainability Symposium January 27-29, 1981, at the Philadelphia Marriott Motor Inn, Philadelphia, Pennsylvania. The luncheon will honor an individual(s) who has made an outstanding contribution to the reliability field. The cost will be \$7.00. Make checks payable to IEEE Reliability Society. Return the reservation form and check by January 1, 1981.

I will attend the Annual Reliability Society Awards Luncheon and my check for \$_____ is enclosed for _____ attendees at \$7.00 each

NAME _____

ADDRESS _____

Make checks payable to IEEE-Reliability Society and mail to:

Joseph J. Naresky
205 W. Cedar Street
Rome, N.Y. 13440

Welcome to New Members

The names and addresses of new members, from June 1980 through August 1980, are listed below. For USA members, they are listed by alphabetical order of their state. For members outside the USA, they are listed by alphabetical order of their country's English name.

ARIZONA

James E. Ireland
Micro Rel Inc
2340 W 10th Pl
Phoenix, AZ 85021

Mike E. Juszkiwicz
Micro Rel Inc
2340 W 10th Place
Phoenix, AZ 85021

CALIFORNIA

R.A. Begun
23609 Skyview Terrace
Los Gatos, CA 95030

Charles J. DeCarli
456 Mavis Dr
Pleasanton, CA 94566

Brian E. Hollins
27100 Moody Rd
Los Altos, CA 94022

James R. Howell
1375 Donohue Dr
San Jose, CA 95131

Alan M. Jepsen
3048 Baronscourt Way
San Jose, CA 95132

Dennis J. Kloss
1079 Fulton Ave
Sunnyvale, CA 94086

Edward T. Knowles
Varian Instrument Group
Walnut Creek Div
2700 Mitchell Dr
Walnut Creek, CA 94598

Allan R. Ogilvie
2205 Davis Drive
Burlingame, CA 94010

Michael D. Olbrantz
41961 Paseo Padre Pkwy
Fremont, CA 94538

Wayne R. Smith
3081 Postwood Dr
San Jose, CA 95132

Jon F. Spencer
15904 Valley Vista Blvd
Encino, CA 91436

Galen Sue
280 East St
Apt #414
Mountain View, CA 94040

Norman R. Wagner
2758 Farnsworth Dr
Livermore, CA 94550

COLORADO

Charles R. Herrington
Solar Energy Res Inst
1617 Cole Blvd
Golden, CO 80401

Robert E. Hetzel
2102 Arron Dr
Loveland, CO 80537

John M. Trenary
Teledyne Water Pik
1730 E Prospect St
Fort Collins, CO 80525

CONNECTICUT

Mark A. Mancuso
393 Conestoga St
Windsor, CT 06095

ILLINOIS

Raymond J. Michaud
2909 Owl Dr
Rolling Meadows, IL
60008

Robert C. Ruiz
3040 W Fargo
Chicago, IL 60645

MAINE

Joseph D. Graziano
Eaton Dr RFD 3
Buxton
Gorham, ME 04038

MARYLAND

W. William Vinson
Dept R151
National Security Agency
9800 Savage Rd
Fort George G. Meade,
MD 20755

MASSACHUSETTS

Robert L. Fredieu
Computervision Loc 6-2
Crosby Drive
Bedford, MA 01730

Kemon P. Taschioglou
Teradyne Inc
183 Essex Street
Boston, MA 02111

MINNESOTA

James E. Haedtke
684 Allen Blvd
Savage, MN 55378

NEW JERSEY

Roman C. Ferret
48 Good Luck Dr
Bayville, NJ 08721

NEW YORK

Min Sung Choi
6-E 69 Imperial Gardens
Wappingers Falls, NY 12590

Henry R. Horst
19 Streit Ave
Poughkeepsie, NY 12603

John D.D. Keighley
8 Meadow Dr
Fayetteville, NY 13066

Pitu B. Mirchandani
Rensselaer Polytechnic Inst
Trdy, NY 12181

Richard H. Sugatt
68 Upper Hook Rd
Rhinebeck, NY 12572

OHIO

Hou S. Cheng
4807 North Sedgewick Rd
Lyndhurst, OH 44124

David F. Neely
4910 Denny Ln
Dayton, OH 45431

SOUTH CAROLINA

Harold D. Bonnett
NCR Corp
3325 Platt Springs Rd
West Columbia, SC 29169

VIRGINIA

Thomas J. Mikuszewski
Evaluation Research Corp
2341 Jefferson Davis Hwy
Suite 515
Arlington, VA 22202

VERMONT

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IBM
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Essex Junction, VT
05452

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Sergio Coan
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Cordignano TV
Italia 31016

MEXICO

Roberto G. Gonzales
Xavier Sorondo #28
Col Villa De Cortes
Mexico DF Mexico ZP
13

PANAMA

Jorge Lee
PO Box 6-1602
Panama, Panama

TAIWAN

Duan Wei
Box 1-2 Lung Tan
Taiwan Republic of
China

An Invitation To Membership in the Reliability Society

There is no better time than now to join the IEEE Reliability Society. Membership gives you ready access to meetings and conferences in your areas of interest, and to the prime movers in engineering, science, and business.

The Reliability Transactions and Newsletter - both included in your Reliability Society Fee - keep you abreast of the latest developments in the reliability field. You also receive automatically a free copy each of the Proceedings of the:

- Annual Reliability and Maintainability Symposium,
- International Reliability Physics Symposium.

As an IEEE member, you can choose from a wide offering of Standards, products, and services (books, conference records, employment surveys, short courses, and other helpful aids) - all at reduced member rates.

Active local Reliability Society chapters in many locations throughout the United States offer opportunities for your personal professional participation and growth. Association with other Reliability Society members helps you to exchange information and experiences on current technical problems and to learn how others are solving them.

Your membership entitles you to reduced registration fees for activities sponsored or cosponsored by the IEEE or Reliability Society. This could save you more than the cost of annual membership.

Don't wait. Fill out the membership application below and mail it today. If you are already a member of the Reliability Society, show this application form to a colleague - sign up another member. The cost/benefit ratio is terrific.

* The age and sex information requested on the application form is for demographic purposes ONLY. The information (or lack thereof) does NOT affect the application at all.

IEEE RELIABILITY SOCIETY FEE: \$7.00 PER YEAR

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| If you are a student, see your IEEE counselor or write for Student Membership brochure. |
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| Course | Degree received | Date |
| ENDORSEMENT (Signature of one IEEE member, who knows you professionally.) | | |

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