Chair’s Note

Trevor Craney
Chair, Reliability Division of ASQ
chair@asqrd.org

Chair’s Message

We are almost 75% of the way through 2014 and I am very happy with the activities taking place in the division. We had a successful RAMS conference in Colorado Springs, CO and we are planning for another successful one at the Innisbrook in Palm Harbor, FL in January, 2015. We just completed a successful ASTR conference with increased attendance compared to last year and a lot of positive feedback from the attendees. I am talking with the current sponsors of the FTC (ASQ Fall Technical Conference) and the current prospect looks good that the ASQ-RD will soon be a partner in this conference, as well. We held two continuing education courses at RAMS this year and we also completed one in Connecticut in August, in partnership with the ASQ Hartford section. Networking and training opportunities are important to you and we have numerous volunteers who work diligently to bring these opportunities to you.

Our website (www.asqrd.org) is active and serving as our main portal to RD membership benefits. You can find information about our conferences and training opportunities there, as well as see information on our highly successful webinar series – upcoming webinars and the over 100 webinars in our archive. While we continue to keep our live webinars open to the public as a service to the community at large, the archived webinars are only accessible by logging in to the website. All ASQ-RD members have been sent login info for asqrd.org. It is separate from your asq.org site login. If you have not received this information, please send a note to webmaster@asqrd.org and you will receive the necessary information.

Individuals who register for the live webinars receive a certificate with RU’s. Individuals who log in to our website and watch an entire webinar can also receive a certificate with RU’s for those webinars. Additionally, the system will maintain a training record for you for the webinars you have completed on asqrd.org, in case you lose your certificates or need a convenient way to see your record in the future.

Our regional councilors program continues to become more active. We now have numerous engagements planned on the calendars of ASQ sections’ programs for the fall of 2014 and spring of 2015. We are getting the word out to ASQ members about the reliability profession and how the ASQ Reliability Division is working to deliver the needs of its members. If you are also involved in your local ASQ section, and would like more information, please contact either me (chair@asqrd.org) or Dan Burrows (dcb@panduit.com).

We continue to have new volunteers that are helping to bring your member benefits to you. I want to thank Amanda Gillespie, who is now alternating with Jim Breneman in producing this quarterly newsletter. She is also active in helping Dave Auda to host our webinars. Tim Gaens is managing our LinkedIn group and does this from Belgium, (cont’d on Page 2)
Chair’s Note (cont’d)

helping to show our expansion into a more global outreach. We are looking at opportunities to partner with other professional organizations that concentrate on support to individuals engaged in work in reliability and maintainability. We will hopefully have some more news to share on this in the upcoming newsletter or at our open meeting at RAMS in January.

The ASQ-RD leadership team recently met on September 13 to review and plan activities for 2014-2015. As you will see in John Bowles’ report, our finances are in good shape. We reviewed our progress against our business plan for 2014 and I am proud to say that most items are complete and we anticipate completing all items 100% as planned in 2014. We will be putting together the 2015 business plan and budget in the next month or so. Based on some of the proposed activities, and potential uncertainty in line items of the budget, it could be a challenge to do everything that we want to do, but I am confident our team will pull it off.

And, finally, as I’ve said before, the RD is engaged in a lot of activities. Get involved. It’s a great way to help out the reliability community, network with other R&M professionals, and progress into opportunities for leadership positions of an organization of over 2500 individuals. We have numerous activities and we can add more as ideas are identified and volunteers step forward. If you have an idea or would like to discuss opportunities in the division, please send an email to: chair@asqrd.org and we can start the conversation. There is always an opportunity to present a webinar or help out with website updates or other learning opportunities. I am enjoying this opportunity to serve as your Chair of the ASQ Reliability Division.

Trevor Craney

Division Budget Update

ASQ-RD Treasurer’s Report

John Bowles, ASQ-RD Treasurer

The Division continues to have a strong balance sheet with over $57,400 in its checking and ASQ Investment Program accounts at the end of June 2014. Investments in ASQ’s Reserve Fund were slightly more than $99,400. There is also a $3,500 advance on the balance sheet for the ASTR seed money and a $3,500 advance for RAMS ’15 seed money. First half investment income was $4,556; income from all sources was $50,044 and expenses totaled $37,445.

ASQ, like most businesses, uses “accrual” accounting, where income and expenses are “booked” at the time the funds are committed rather than when a deposit is made or a check is written. The Reliability Division uses “cash” accounting for tracking revenues and expenses and managing the budget. This means that income and expenditures are record at the time the funds are received or a check is written. This is the type of accounting most people and households use for their personal accounts. This difference in accounting methods accounts for some of the differences in the revenues and expenditures reported above and those used to track adherence to the budget discussed below. It also gives rise to some “budget anomalies”, such as when revenues and expenses for a conference or course are budgeted for one year and received or spent in a different year.

The figure on the next page shows our 2014 budget, and revenue and expenses for the first half 2014. A comparison with the first half of 2013 is also shown. On the revenue side member dues are somewhat ahead of last year and registrations, mostly income from conferences, are much higher. Much of the Registrations difference is because the profit (surplus since we are a non-profit), $8,070, from the 2013 ASTR conference was not received until February 2014 and is counted in the first quarter 2014 instead of the fourth quarter 2013. In addi-
Division Budget Update (cont’d)

received until February 2014 and is counted in the first quarter 2014 instead of the fourth quarter 2013. In addition the pre- and post-conference courses taught in conjunction with RAMS yielded $6,569; RAMS itself returned a surplus of $9,571. Some advertising revenues were also delayed coming in 2014 instead of 2013.

Looking ahead, a new course to be taught in Connecticut in September will yield additional registrations but also increase the travel expenditures.

Expenses are also running ahead of 2013. Contract and Professional services reflect the development of our new website which is now up and running; Partner Payments, as noted above, consists of the seed money for ASTR as well as for RAMS. Some of the payments to the winners of the 2013 RAMS Best Paper by an RD member and the best Quality Engineering paper for 2013 were not made until 2014. Travel is also running ahead of last year due to greater attendance at the various leadership meetings and instructor travel to various courses.

Learning Opportunity: Quality - Reliability Flow

Taken from “ASQ Reliability Division - Who We are & How Can We Help” by Dan Burrows
Ops A La Carte Company Statement

9/15/14

“Ops A La Carte, LLC is deeply saddened to announce that company founder, Mike Silverman, passed away on September 13 after battling cancer. He was surrounded by his family and loved ones. Mike started Ops A La Carte 12 years ago with a vision of being able to support any company, with any product, in any industry, anywhere in the world to meet their reliability goals. Since then, Ops A La Carte has become a leader in providing professional reliability services and its worldwide team of over 60 expert consultants have worked on over 1,500 products in 100 different industries in 30 countries.

Although we are mourning the loss of Mike, our valued leader, co-worker and friend, the Ops A La Carte team remains committed to continue its legacy of excellence for years to come. The Silverman Family asks for respect and privacy during this time.

Michael Silverman, Ops A La Carte LLC, Passes Away

Mike, age 50, passed away peacefully at home surrounded by family on September 13th after a valiant 14 month battle with cancer. His positive outlook on life was an inspiration to the end.

Mike owned and operated Ops A La Carte LLC, providing training, testing and reliability engineering consulting services to companies around the world. He and his family have resided in Saratoga, CA since 1986. Mike is survived by his loving wife of 25 years, Kim; their children, Shaelyn (18) and Shawn (16); his parents Bernard and Sheila Silverman; and his siblings, Gary, Debi and Dan. Mike will be sorely missed by all who had the pleasure of knowing him before his premature passing.

Funeral services were held on Monday, September 22 at 10 a.m. at Skylawn Memorial Park, Hwy 92 and Skyline Blvd., San Mateo, CA. Donations made in Mike's memory should be directed to March of Dimes, Colorado Chapter, 1325 S. Colorado Blvd. Suite B-308 Denver, CO 80222.

Published in San Jose Mercury News/San Mateo County Times on Sept. 16, 2014.
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**Software**

Acclaimed for their ease of use, analytical power and unparalleled technical support, ReliaSoft’s software facilitates a comprehensive set of reliability-related analysis techniques. The Synthesis Platform® facilitates intelligent integration between analysis tools.

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<th>Software</th>
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<td>Accelerated life testing data analysis</td>
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<td><strong>D</strong> DOE++</td>
<td>Experiment design and analysis</td>
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<td><strong>R</strong> RGA</td>
<td>Reliability growth analysis</td>
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<td><strong>B</strong> BlockSim</td>
<td>System analysis using block diagrams or fault trees</td>
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<td><strong>R</strong> RENO</td>
<td>Visual stochastic event simulation and risk analysis</td>
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<td><strong>λ</strong> predict</td>
<td>Standards based reliability prediction</td>
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<td><strong>F</strong> XFMEA</td>
<td>FMEA/FMECA and related analyses</td>
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<td><strong>M</strong> RCM++</td>
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<td><strong>R</strong> RBI</td>
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<td>MSG-3 aircraft systems and powerplant analysis</td>
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**Education**

ReliaSoft offers an extensive curriculum of reliability training courses that provide thorough coverage of the underlying principles and theory as well as the applicable software. The complete course list and calendar of upcoming public seminars are published on the web.

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ReliaSoft’s expert reliability consulting services team offers a uniquely powerful combination of industry insight, unparalleled subject mastery and, most important of all, direct access to all of ReliaSoft's global resources, expertise and contacts.

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Two Focused Tracks
To address the growing needs and diversity of our attendees, we have expanded, restructured and reconfigured ReliaSoft's training course offerings. Courses are now divided into two main tracks, one maintaining our traditional focus on reliability in product development and the other focusing on reliability engineering from an asset management perspective.

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<td>D301</td>
<td>Introduction to Reliability 3.0 (DFR Focus)</td>
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<tr>
<td>M301</td>
<td>Introduction to Reliability 3.0 (APM Focus)</td>
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<td>G400</td>
<td>Foundations of Reliability Engineering Data Analysis and Modeling</td>
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<td>G511</td>
<td>Application of Reliability Growth Models in Developmental Testing and Fielded Systems</td>
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<tr>
<td>D521</td>
<td>Advanced Quantitative Accelerated Life Testing Analysis</td>
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<td>G522A</td>
<td>System Reliability and Maintainability Analysis and Optimization</td>
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<td>G522B</td>
<td>Simulation Modeling for Reliability and Risk Analysis</td>
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<td>Design for Reliability (DFR) Program Planning and Implementation</td>
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<td>M560</td>
<td>Reliability-Based Program Planning and Implementation in Asset Management</td>
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<td>G588</td>
<td>Applications of Experiment Design and Analysis in Reliability Engineering</td>
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<td>G902</td>
<td>Introduction to the Synthesis API</td>
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</tbody>
</table>

For more information, please visit: http://Seminars.ReliaSoft.com
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  - RAMS part proceedings (2007 to present)
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<td>Discounts for ASQ-RD sponsored conferences &amp; training events</td>
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<tr>
<td>Eligible for ASQ-RD annual best paper awards (RAMS &amp; QE)</td>
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English webinars:
1. Reliability Block Modeling as a decision tool, October 9, 2014 Noon (EST)
   Presenter: Marc Banghart
2. Pitfalls of Accelerated Tests, October 30, 2014, Noon (EST)
   Presenter: Bill Meeker
   Presenter: Ming Li
4. Counterfeit Electronics, January 8, 2015, Noon (EST)
   Presenter: Diganta Das

Chinese webinars:
A Case Study on the Degradation Analysis for Colling Systems (中文讲座：制冷系统衰变数据的案例分析)
October 12, 2014, 10:00AM Beijing
Speaker: Dr. Liu Xiao

Spanish Webinars:
La Utilidad Diversa De FMEA, Fundamentos
November 3, 2014,  6:00 PM Mexico City (CST)
Speaker: Norma Antunano

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For previously recorded webinars on topics relevant to reliability engineers delivered by subject matter experts. Visit : http://www.asqrd.org/past-webinars
Current CRE statistics:
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- Failure Mode and Effects Analysis (FMEA)
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- Lean Six Sigma Green Belt Training
- 2014 Learning Institute Training Catalog

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### Are you interested in volunteering? Would you like to develop your leadership and team work skills, in a team where you can make a difference? ASQ Reliability Division leadership team is looking for a secretarial co-chair and treasurer co-chair
Responsibilities include documentation and communication within the division, with the members and with ASQ Global. You will find the requirements for the position in this document
If you are interested, please send your details to chair@asqrd.org.
Excerpt #6 from “A History of Reliability” by Jim McLinn

The author and his thesis advisor Richard Barlow totally missed its potential for reliability estimation from simple shipments and returns. Other areas being studied included gold embrittlement, PROM nichrome link grow back, moisture outgassing of glass sealed packages and problems with circuit boards. Perhaps the two most memorable reliability papers from this decade were published by IRPS 1978. The first discussed soft error rates in memories caused by internal alpha particles. This was by Woods and May of Intel and was titled “A New Physical Mechanism for Soft Errors in Dynamic Memories”. It identified the glass seal of some military packages as the source of the alpha particles. The second paper concerned the accelerated testing of ICs with activation energies calculated for a variety of failure mechanisms was by D.S. Peck of Bell Labs. By the end of the decade, commercial field data were being collected by Belcore as they strived to achieve no more than 2 hours of downtime over 40 years. This data became the basis of the Belcore reliability prediction methodology [28].

The Navy Material Command brought in Willis Willoughby from NASA to help improve military reliability across a variety of platforms. During the Apollo space program, Willoughby had been responsible for making sure that the spacecraft worked reliably all the way to the moon and back. In coming to the Navy, he was determined to prevent unreliability. He insisted that all contracts contain specifications for reliability and maintainability instead of just performance requirements. Willoughby's efforts were successful because he attacked the basics and worked upon a broad front. Wayne Tustin credits Willoughby with emphasizing temperature cycling and random vibration, which became ESS testing. This was eventually issued as a Navy document P-9492 in 1979. Next, he published a book on Random Vibration with Tustin in 1984. After that, he replaced older quality procedures with the Navy Best Manufacturing Practice program. The microcomputer had been invented and was making changes to electronics while RAM memory size was growing at a rapid rate. Electronic calculators had shrunk in size and cost and now rivaled early vacuum tube computers in capability by 1980. Military Standard 1629 on FMEA was issued in 1974, and human factors engineering and human performance reliability had been recognized by the Navy as important to the operating reliability of complex systems and work continued in this area. They led groundbreaking work with a Human Reliability Prediction System User’s Manual in 1977 [12]. The Air Force contributed with the Askren-Regulinski exponential models for human reliability. NASA made great strides at designing and developing spacecraft such as the space shuttle. Their emphasis was on risk management through the use of statistics, reliability, maintainability, system safety, quality assurance, human factors and software assurance [10]. Reliability had expanded into a number of new areas as technology rapidly advanced.

The 1980s was a decade of great changes. Televisions had become all semiconductor. Automobiles rapidly increased their use of semiconductors with a variety of microcomputers under the hood and in the dash. Large air conditioning systems developed electronic controllers, as had microwave ovens and a variety of other appliances. Communications systems began to adopt electronics to replace older mechanical switching systems. Belcore issued the first consumer prediction methodology for telecommunications and SAE developed a similar document SAE870050 for automotive applications [29]. The nature of predictions evolved during the decade and it became apparent that die complexity was the only factor that determined failure rates. Kam Wong published a paper at RAMS questioning the bathtub curve [25]. During this decade, the failure rate of many components dropped by a factor of 10. Software became important to the reliability of systems; this discipline rapidly advanced with work at RADC and the 1984 article “History of Software Reliability” by Martin Shooman [13] and the book Software Reliability – Measurement, Prediction, Application by Musa et.al. Complex software-controlled repairable systems began to use availability as a measure of success. Repairs on the fly or quick repairs to keep a system operating would be acceptable. Software reliability developed models such as Musa Basic to predict the number of missed software faults that might remain in code. The Naval Surface Warfare Center issued Statistical Modeling and Estimation of Reliability Functions for Software (S.M.E.R.F.S) in 1983 for evaluating software reliability. Developments in statistics made an impact on reliability. Contributions by William Meeker, Gerald Hahn, Richard Barlow and Frank Proschan developed models for wear, degradation and system reliability. Events of note in the decade were the growing dominance of the CMOS process for the MOSFET. Contributions by William Meeker, Gerald Hahn, Richard Barlow and Frank Proschan developed models for wear, degradation and system reliability. Events of note in the decade were the growing dominance of the CMOS process for the MOSFET. Contributions by William Meeker, Gerald Hahn, Richard Barlow and Frank Proschan developed models for wear, degradation and system reliability. Events of note in the decade were the growing dominance of the CMOS process for the MOSFET. Contributions by William Meeker, Gerald Hahn, Richard Barlow and Frank Proschan developed models for wear, degradation and system reliability. Events of note in the decade were the growing dominance of the CMOS process for the MOSFET. Contributions by William Meeker, Gerald Hahn, Richard Barlow and Frank Proschan developed models for wear, degradation and system reliability. Events of note in the decade were the growing dominance of the CMOS process for the MOSFET.
## Regional Councilors

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<tr>
<td>David Levy</td>
<td>Frank Golden</td>
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<td><a href="mailto:fgolden@aol.com">fgolden@aol.com</a></td>
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<td><strong>Region 4 (Canada)</strong></td>
<td><strong>Region 12</strong></td>
</tr>
<tr>
<td>Gary Gehring</td>
<td>Steve Schuelka</td>
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<td><a href="mailto:sjschuelka@yahoo.com">sjschuelka@yahoo.com</a></td>
</tr>
<tr>
<td><strong>Region 5</strong></td>
<td><strong>Region 13</strong></td>
</tr>
<tr>
<td>William Eastham</td>
<td>Kimberly Rochetti</td>
</tr>
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<tr>
<td><strong>Region 6A</strong></td>
<td><strong>Region 14A</strong></td>
</tr>
<tr>
<td>Edwin Landauer</td>
<td>Shonnah Schlabach</td>
</tr>
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</tr>
<tr>
<td><strong>Region 6B</strong></td>
<td><strong>Region 14B</strong></td>
</tr>
<tr>
<td>Matthew Harris</td>
<td>Kiami Rogers</td>
</tr>
<tr>
<td><a href="mailto:matt@2020ideas.net">matt@2020ideas.net</a></td>
<td><a href="mailto:krogers_asq@verizon.net">krogers_asq@verizon.net</a></td>
</tr>
<tr>
<td><strong>Region 7</strong></td>
<td><strong>Region 15A</strong></td>
</tr>
<tr>
<td>Ed Matthews</td>
<td>Michael Kirchner</td>
</tr>
<tr>
<td><a href="mailto:ed.matthews@honeywell.com">ed.matthews@honeywell.com</a></td>
<td><a href="mailto:mkirchner@saic.com">mkirchner@saic.com</a></td>
</tr>
<tr>
<td><strong>Region 8</strong></td>
<td><strong>Region 15B</strong></td>
</tr>
<tr>
<td>Teresa Whitacre</td>
<td>James Reid</td>
</tr>
<tr>
<td><a href="mailto:tawcqt@aol.com">tawcqt@aol.com</a></td>
<td><a href="mailto:james.reid@hii-ingalls.com">james.reid@hii-ingalls.com</a></td>
</tr>
</tbody>
</table>

**USA & Canada Reliability Division Regional Councilors**

The regional councilors support the Reliability Division mission and the ASQ strategic plan objectives, showing evidence of this activity in a measurable manner.
2014 ASQ-RD Leadership Positions

**Elected Positions**

**Chair**
Trevor Craney
Trevor.A.Craney@shell.com

**Chair-elect**
Marc Banghart
Marc.Banghart@wyle.com

**Secretary**
Jim Breneman
weibullman@gmail.com

**Treasurer**
John Bowles
bowles@cee.sc.edu

**Past Chair**
David Auda
davidauda@yahoo.com

**Appointed Positions**

**Leadership Support Team**

**Division Audit Chair**
Alfred Stevens
asteve5@bellsouth.net

**Communications Chair**
Mauro Andreassa
mandreas@ford.com

**Fellows Nominations**
Charlie Plotkin
cplotkin@ford.com

**Membership Chair**
Mark Durivage
mdurivage@hotmail.com

**Nominating Chair**
David Auda
davidauda@yahoo.com

**Appointed Positions (continued)**

**Continuing Education and Networking**
Marc Banghart
Marc.Banghart@wyle.com
Jim McLinn
jmrel2@aol.com

**Education Chair**
Jim Breneman
weibullman@gmail.com

**RAMS Board of Directors**
Trevor Craney
Trevor.A.Craney@shell.com
Alfred Stevens
asteve5@bellsouth.net

**Awards**
RAMS Best Paper Award Chair
John Bowles
bowles@cee.sc.edu

**QE Best Paper Award Chair**
Trevor Craney
Trevor.A.Craney@shell.com

**CRE Chair**
Paul Burte
PAUL Burte <Paul.Burte@utas.utc.com

**ASQ-RD Mission**

The mission of the Reliability Division is:

* Provide a global forum for networking among practitioners of reliability engineering, management and related topics,
* Facilitate growth and development of division members,
* Promote reliability engineering principles and serve as a technical resource on reliability engineering for ASQ, standards agencies, industry, government, academia and related disciplines,
* Sponsor, present and promote reliability, maintainability, and related training materials for courses, symposia, and conferences.