



November 2017 Newsletter
The IEEE Reliability Society
Joint Section Chapter: Boston - New Hampshire - Providence
September – October 2017
<http://www.ieee.org/bostonrel>

Happy Thanksgiving to our Chapter member and friends. Over the years, our officers, committee members and regular member attendees have provided a warm collegial space for technical exchange -- I am grateful to have been a part of that tradition as Chair. Thanks to all who have attended our meetings this year and volunteered in helping get meeting logistics squared away. Officer elections are coming up, so look for the emails where you can vote, including write-ins. We wish you and your loved ones the very best, and hope you all enjoy a safe and happy holiday season. Finally, a reminder that we have one more meeting this year, our Past Chairs meeting. Some of you may recall that four years ago, Vanu Bose generously agree to present our 2013 Past Chairs meeting. Sadly, he passed away this last weekend; the grief we feel for his family, friends, and colleagues is beyond words. Condolences to all.

Also, look out for the solution to the reliability crossword puzzle at the end of this newsletter!

Warm Regards

A handwritten signature in black ink, appearing to be "Charles H. Recchia".

Charles H Recchia, MBA, Ph.D.
IEEE Senior Member
IEEE Reliability Society AdCom Member '16-'18
Chair, IEEE Reliability Society Boston Chapter joint with Providence, RI and New Hampshire
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Recent Activities:

September 13, 2017

“Creating Reliable and Manufacturable RF Designs” by
Chandra Gupta, Ph.D., MBA

October 11, 2017

“The Genesis of Reliability Engineering aka “Certainty of Operations” Gilmore G. Cooke, PE

Upcoming Events:

December 13, 2017

Trends and Prospective in Risk and Reliability Engineering Research by Dr. Mohammad Pourgol-Mohammad
Annual Boston Reliability Chapter Meeting past chair dinner meeting

January 22-25, 2017

Reliability and Maintainability Symposium (RAMS) 2018
Silver Legacy Resort and Casino, Reno, NV
Visit [here](#) to register

Recent Chapter Activities

“Creating Reliable and Manufacturable RF Designs” presented by Chandra Gupta, Ph.D., MBA

Electronic system demands for smaller size, lighter weight, lower power consumption and lower cost (also known as SWAP-C) are being met through design, development and production of heterogeneous high density packages, system in package (SIP), and system on chip (SOC). Complex monolithic chips containing high number of semiconductor devices present unique challenges when it comes to determining reliability.

Reliability is designed in by taking numerous device physics properties into account. Many of the effects such as activation energy, electro migration, hot carrier injection, dissimilar metals and whisker growth need to be taken in consideration when designing RF systems and for that matter any other electronic systems. The production considerations incorporate overall the best value, manufacturability, quality, parts obsolescence, supply chain and support through the life of the systems. These issues will be covered and show that implementing these measures leads to overall value, higher reliability and a lower total cost ownership.



Dr. Chandra Gupta, Ph.D. (EE) and MBA has over thirty years of experience in RF and microwave industry. He has designed, developed, managed and produced a wide range of RF, microwave and millimeter wave components, integrated microwave assemblies and custom assemblies with cutting edge technologies for commercial and defense applications.

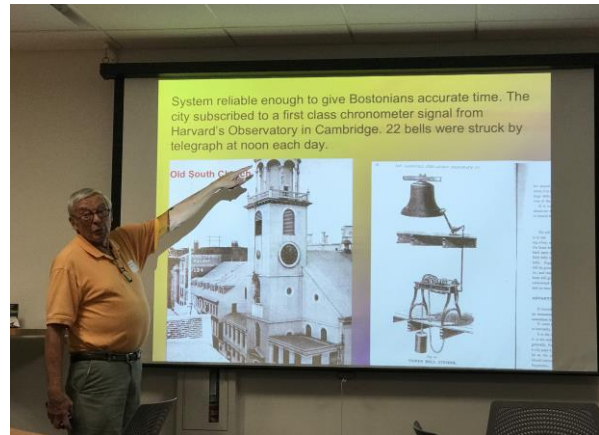
He has held positions ranging from IPT Manager at BAE Systems, VP of Operations and Engineering at Herley Industries, General Manager at Aeroflex and Director at Hittite . He is now a Senior Engineering Program Manager at Communications & Power Industries (CPI) at Beverly, MA developing and producing High Power Amplifiers.

Dr. Gupta is a Senior Member of Institute of Electrical and Electronics Engineers.

“The Genesis of Reliability Engineering aka “Certainty of Operations” presented by Gilmore G. Cooke, PE

The first two individuals to introduce reliability engineering in their work were: Dr. William Channing (1820-1901), inventor of Boston’s fire alarm system over 160 years ago, and Fred Stark Pearson (1861-1915), chief engineer of the world’s first and largest public transit system of Boston. Channing had carefully examined and specified requirements for communicating fire emergencies, coining the phrase ‘unerring certainty of operations’. Channing then incorporated certain design features to guard against circuit interruptions and false alarms. These included redundant conductors, separation of circuits, monitoring of

circuits, and automatic testing of wires. In his paper to the Smithsonian Institution in 1855, he reported that the overall design had proved sufficient to make Boston's fire alarm system the 'most certain means of communications which has yet been devised, under all conditions of weather and seasons'. Decades later when Pearson was an engineering student at Tufts College, he visited Boston's central fire alarm station with Professor Dolbear. He became a disciple of Channing by expanding his motto to 'taking the public view with regards to certainty of operations'. Pearson applied reliability engineering concepts to develop power and traction systems in Boston, Manhattan, Niagara Falls, Mexico City, Sao Paulo, Rio de Janeiro and Barcelona.



Gilmore Cooke is Chair of the History and Milestones Committee of the IEEE Boston Section as well as its Secretary. He is a Professional Engineer in Massachusetts and California. He has worked throughout his career on large engineering and construction projects, both locally and throughout in the United States. He received the Bachelor of Electrical Engineering degree in 1962. He is a volunteer in the IEEE and belongs to various historical societies. He's published numerous articles on electrical engineering history and wrote The Story of L-Street Power Station, 1898-2006. He teaches a class to adults at the community college entitled History of Wired and Wireless

Communications on Cape Cod.

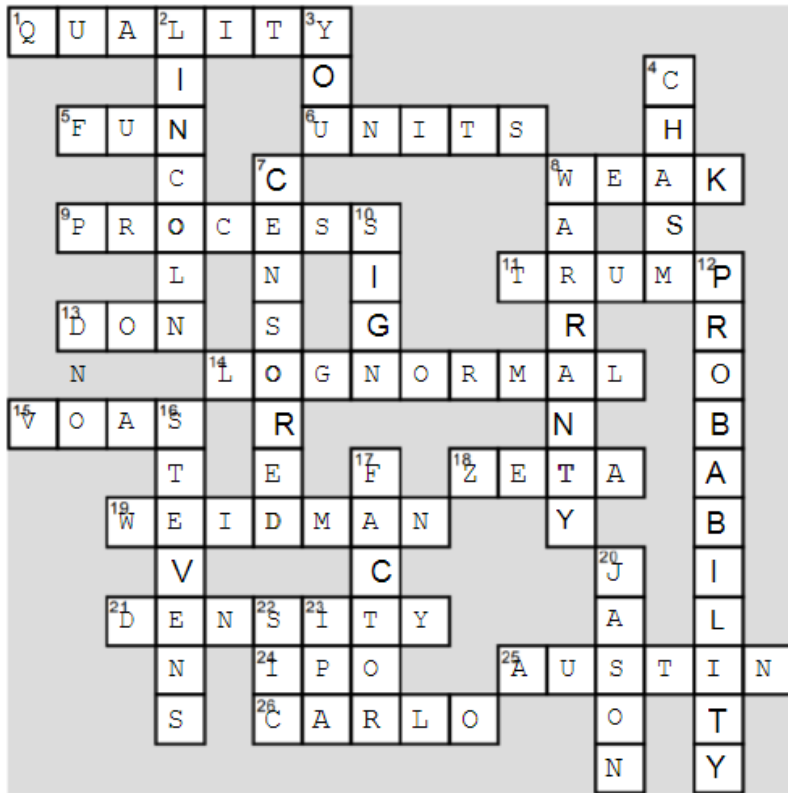
Link to past presentations <http://ewh.ieee.org/r1/boston/rl/presentations.html>

Special thanks to our corporate supporters:

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**Answers to the
August 2017
Reliability Crossword
Puzzle!**

Chapter Participation and Outreach Efforts

Chapter Seeks Volunteers



We are interested in having you help out as a volunteer contributing as much or as little as you would like. We need a good team of volunteers that help us keep things going. If you would like to join us, there is probably a good opportunity to choose how you would like to contribute. Email or talk to any of us at the next monthly presentation or attend one of our Advisory Committee meetings.

For updates on upcoming events: <http://ewh.ieee.org/r1/boston/rl/events.html>.

Readers can contact chapter newsletter editor Ken Rispoli (ken-rispoli@ieee.org) with any comment/suggestion or if interested in contributing to our next issue. Thanks.

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