

As promised in *Acoustics Today* Editor Arthur Popper's spring issue Editor's page, this fall 2014 Issue is devoted entirely to honoring longtime Acoustical Society member Leo Beranek on his 100th birthday. Indeed, on September 15, 2014 Leo becomes the ASA's first continually active centenarian member. Moreover, Leo will be attending and presenting an invited paper at the fall 2014 ASA meeting in Indianapolis. He will also be the Plenary Session invited speaker at the Institute of Acoustics' (IOA) 40th Anniversary Meeting in Great Britain just a few weeks earlier.

Leo has been actively involved in each of ASA's significant anniversaries, the 25th in 1954, the 50th in 1979, and the 75th in 2004. Of course, we expect that Leo sees no reason not to be involved in the 100th in 2029.

Editor Popper invited the two of us to be guest editors for this issue. Both of us are long time active ASA members and we have served a good portion of our professional lives as consultants with the legendary acoustical research and consulting firm Bolt Beranek and Newman Inc. (BBN). Bill left BBN in 1970 as Director of the then Architectural Technologies Division to start an Independent consulting practice at just about the time Carl joined the consulting staff and later headed BBN's Architectural Acoustics Division in Cambridge. When BBN closed down its architectural and environmental acoustics consulting operations in the early 1990's, Carl became a founding partner of BBN's successor firm Acentech Inc. Both Bill and Carl are thoroughly familiar with the history of Leo Beranek's accomplishments over his years at BBN as well as in the Acoustical Society.

This special issue is to have six main essays on various aspects of Leo's professional achievements in acoustics, in business, and in the Acoustical Society as the centerpiece of the issue. These essays are authored by distinguished members of the acoustical community. Along the bottom of the pages of the essays is a timeline of significant achievements and events in Leo's life.

In addition, we provide a series of what we are calling "side bars"--short stories and photos by more than 25 friends of Leo, many of whom are former colleagues, students, and co-workers. We as guest editors appreciate the prompt submittals by authors of both the essays and the sidebar photos and story texts. Also we appreciate the contributions of our colleague Andy Carballeira whose ample computer graphics skills enabled us to integrate seamlessly into 22 separate text pages of the issue Leo's century long timeline. These prompt submittals have greatly eased our guest editor worries and,

of course, those of the AT editor and production staff about meeting the publishing deadlines. Thank you one and all.

A few brief words about the essays: Our lead essay, "Leo Beranek's Role in the Acoustical Society" is authored by the Acoustical Society's first Executive Director, Charles Schmid. Charles recently retired after serving in this role for over 23 years. His essay focuses on one aspect of Leo's extraordinary life, namely the mutual benefits both he and the Society have enjoyed from a very long and productive relationship. This includes a great many entirely voluntary roles that Leo played for over 75 years in exercising leadership and organizational skills, in publishing technical papers, periodicals and books, in developing acoustical standards, and in teaching generations of students the fundamentals of acoustical sciences and technologies who in turn continue to pass this knowledge onto other future generations.

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Our second essay, "Leo's Contributions to Noise Control," by Bill Lang and George Maling comprehensively covers Leo's work done during his post-graduate years at Harvard during WWII, where he became Director of the Electro-Acoustics Laboratory (1940-46) and the Systems Research Laboratory (1944-46). Leo then moved down the Charles River to MIT where he accepted an offer to teach as Associate Professor of Communications Engineering, become Technical Director of the MIT Acoustics Laboratory (1947-58), and to join with his WWII friend and colleague Professor Richard Bolt of MIT's Physics Department and Director of the Acoustics Laboratory. Both Bill Lang and George Maling were doctoral candidates during this period doing research at the lab and getting to know Leo and Dick. Bill Lang was one of the initial employees of a partnership Bolt and Beranek formed to handle the consulting work involved in the new United Nations Headquarters being built in New York City and other consulting assignments undertaken by the partnership. Both Bill and George maintained close ties with Leo during this early post-WWII period and subsequent "environmental age" that was dawning in the late 1950's and through the 1960's.

Leo, Bill, and George saw the need for a new professional organization of noise control engineers, a need the Acousti-

cal Society was not structured to fulfill although all agreed that it was essential to maintain close relationships between such professional organizations. Largely through their efforts, the Institute of Noise Control Engineering of the United States of America (INCE/USA) became a reality and Leo served as its Charter President in 1971. All of this is covered in some detail in Bill and George's essay along with other developments in noise and vibration control engineering and the compatible, cooperative and indeed productive relationships that have existed through the present day between INCE/USA and the Acoustical Society of America. A large percentage of members of ASA's Technical Committees on Noise, Architectural Acoustics, Structural Acoustics and others are members of INCE.

The third and fourth essays cover Leo Beranek's involvement in two somewhat overlapping subsets of transportation systems noise and vibration control and in community noise assessments. Carl Hanson's essay "Leo Beranek's Contributions to the Field of Transportation Noise" focuses on the basic noise mechanisms involved as well as Leo's important role in the ultimately successful introduction of jet powered aircraft into the civilian air carrier fleets. Sandy Fidell's essay "Leo Beranek's Contributions to Psychoacoustic Research and Community Noise Impact" also focuses on the introduction of the jet powered aircraft age, but more from the perspective of the significant research in transportation system noise and community impacts carried on at BBN's Los Angeles office under the leadership of Bill Galloway, Karl Pearsons, Sandy Fidell, Dave Keast, and many others at the time.

In the fifth essay, "Leo Beranek and Concert Hall Acoustics," Ben Markham brings together the enormous contributions that Leo has made throughout his entire professional life to understanding the acoustics of music performance spaces. Even in the early days of BBN (1950's and early 1960's), Leo never missed an opportunity to visit, measure and, when possible, discuss particular halls with architects, acoustical consultants, orchestra directors, players, soloists, and even music critics. What is more significant, Leo kept very detailed notes. As Ben Markham weaves his story, Leo published his findings on some 55 halls throughout the world in his 1962 classic, *Music, Acoustics and Architecture*, the first of his trilogy of concert hall books. *Concert and Opera Houses: How they Sound*, 1996, and *Concert Halls and Opera Houses:*

*Music, Acoustics, and Architecture*, 2004, make up the other two in the trilogy. Also, Markham carefully organizes and discusses many of Leo's relevant technical papers as well as jointly written papers and reviews with other collaborators from as far away as Japan and Australia.

The last essay of this special issue of *Acoustics Today* is David Walden's "Technology, Business and Civic Visionary." This essay tells the story of Leo not only bringing computers to BBN but to so many other aspects of his overall professional life in sound, science, and industry (as the title for Leo's 2008 autobiography so aptly frames it). David's essay encapsulates the essentials of the epic 559 page report to BBN employees, previous employees, historians, and others worldwide that was edited by Dave and his colleague Ray Nickerson. (The latter became famous as the inventor of the e-mailing address format using the symbol @ initially for messages in the ARPANET and ultimately, and universally, throughout the INTERNET). David's essay covers important key information on Leo and other BBN staff insights and innovative leadership in the development of computer applications for a wide range of applications.

All involved in producing this fall 2014 issue of *Acoustics Today* are enormously grateful to each of the essay authors, in particular, for their contributions towards making this issue a truly special one, honoring a remarkable human being who has never stopped giving and sharing his enormous talents in everything he has been involved with throughout his century of living. What more can we say?

Happy Birthday Leo!

Carl J. Rosenberg and William J. Cavanaugh

Email: crosenberg@acentech.com

Postal: Acentech Inc., 33 Moulton Street,  
Cambridge, MA 02138

Email: wcavanaugh@cavtocci.com

Postal: 3 Merifield Lane, Natick MA, 01760

## Biosketches

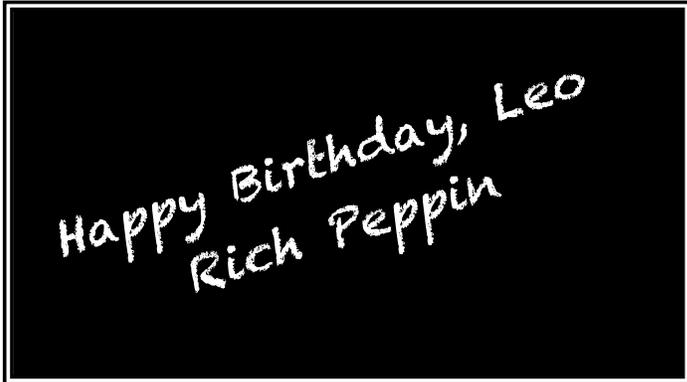
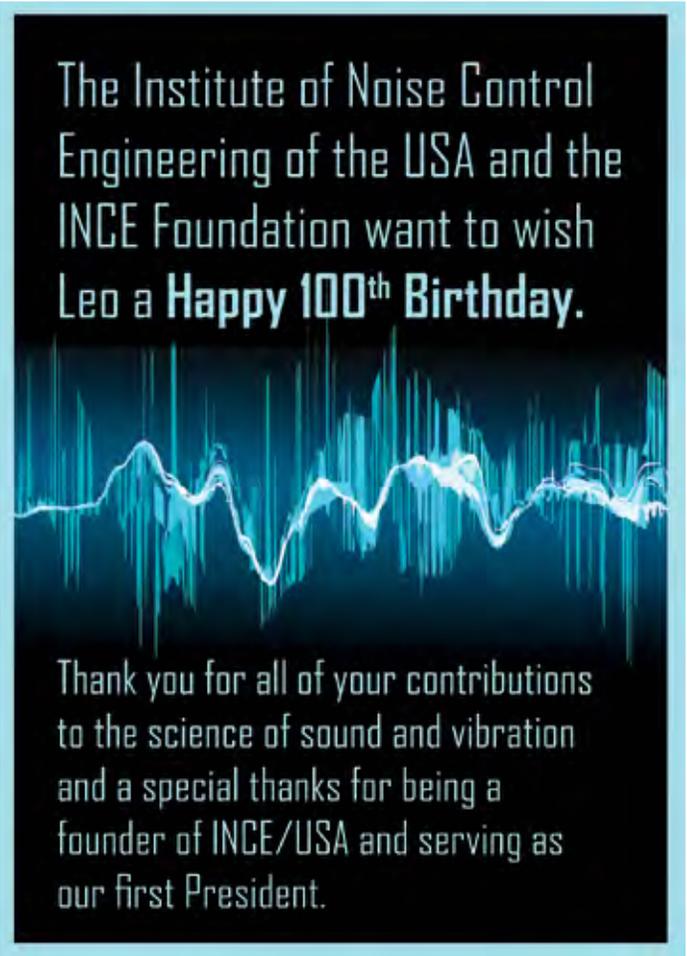


Carl Rosenberg (left) and Bill Cavanaugh (right)

After completing an M. Arch. degree at M.I.T., **Carl Rosenberg** (left) started his acoustics career as an acolyte of Bob Newman at BBN. He transitioned to Acentech when that group spun off into a separate

employee-owned company, where he has continued his consulting career and held various management and leadership positions. He is a member of the Technical Committee on Architectural Acoustics of ASA, reviews patents for JASA, and is currently the Chair of the Acoustical Society Foundation Board.

**Bill Cavanaugh** (right) studied architecture at the MIT School of Architecture receiving a B. Arch. in June 1951. He has been continuously involved in acoustical consulting since 1954 and now serves as Senior Principal Emeritus with Cavanaugh Tocci Associates in Sudbury, MA. He is a Fellow of the Acoustical Society of America and received the Distinguished Service Citation in 1994 and the Wallace Clement Sabine Medal in 2006. He is a Board Certified Member and Fellow of the Institute of Noise Control Engineering. He is a member of the National Council of Acoustical Consultants and served as NCAC President in 1977-79.



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**Happy Birthday Leo!**  
From your colleagues at  
**Acentech**<sup>\*</sup>  
*\*Formerly Architectural Acoustics  
and Environmental Technologies  
Division of Bolt Beranek Newman Inc.*