

A Tribute to the Acoustical Society of America

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First, I wish to express my deep appreciation for the fall 2014 issue of *Acoustics Today* which is dedicated to me and covers my activities throughout my career as an acoustician. I am particularly indebted to Carl Rosenberg and William Cavanaugh who solicited and edited the articles in the issue and to President Judy Dubno and Editor Arthur Popper who approved and put the publication together. In the paragraphs that follow I make some remarks that relate to my activities as a scientist and teacher to the Acoustical Society of America.

My career as an acoustician has spanned a period of 77 years. I first attended a meeting of the Acoustical Society of America in Iowa City in November 1939. There were only 27 papers at that meeting which meant no parallel sessions and thus the opportunity for one to meet every leading acoustician several times. I received my doctorate in 1940. I submitted two papers, based on my thesis, to *JASA* that they acknowledged having received June 1, 1940. They were published in the July 1940 issue. This rapid publication was most fortunate for me as Professor Philip Morse at MIT expressed great interest in my work and this led to an unusual happening in my career that very October. The newly established U.S. National Defense Research Committee had received a request from the US Air Corps to develop a new light-weight acoustical material for use in reducing noise levels in the cockpits of combat airplanes. Morse recommended me as director of the project which was named the Electro-Acoustic Laboratory at Harvard University. We also made major improvements in voice communication in high-altitude, unpressurized, combat aircraft and in ground vehicles. These wartime efforts led to the publication, after the war, of my first book, *Acoustic Measurements*.

I have taken particular interest in the Acoustical Society. As President, in 1954, I saw that the Society needed to change its governance and to better bond its members. The ultimate result was the creation of 13 technical committees, the chairs of which now serve as members of the Technical Council, which is under the general chair of the Vice President of the Society. The technical committees help put together the



At a special reception, members of the ASA presented Dr. Beranek with a cake to celebrate his centennial birthday.

technical programs of the Society's biannual meetings and they bring, via the Technical Council, recommendations for actions by the Executive Council.

I have enjoyed teaching. I was on the physics faculty at Harvard University before and after WW-II. There, I taught electronics and supervised laboratory experiments. At MIT, as Associate Professor, I taught electrical engineering courses and initiated an acoustics course that led to my 1954 book *ACOUSTICS*. This book largely changed the way acoustics had been taught. The text has been translated into many languages and is still available today. The teachings of that text led to smaller loudspeakers, hastened the adoption of FM broadcasting, and gave the basis for noise control.

I believe that the Acoustical Society should do everything possible to see that acoustics is taught in a significant number of universities. Society members should be encouraged to make contributions to the Acoustical Society Foundation so that students are given travel money to go to meetings and receive supplementary scholarship aid. Government and industry should be urged to support basic research in the various branches of acoustics. Manufacturers are learn-

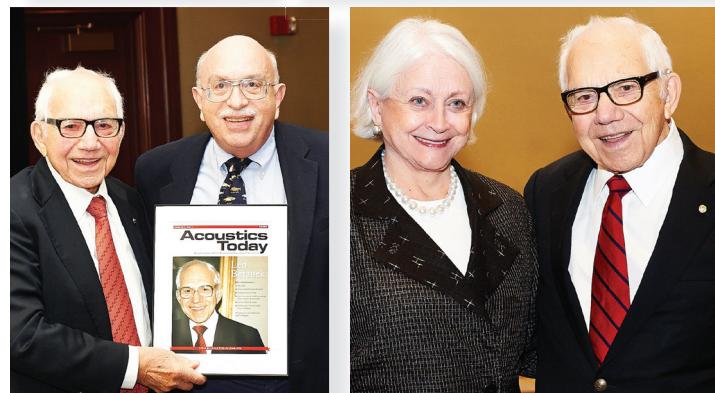
ing that quieter products sell better. At very little increased cost dwellings can be made quieter. As a further example, airplane engines are enormously quieter today as a result of substantial government and industry support.

Noise control has been an important part of my acoustics activities. I have published six books either alone or with co-authors on the subject of noise and vibration control. Two of my largest and most important projects were the quieting of an enormously noisy NASA supersonic-jet engine during tests, which resulted in my designing the world's largest muffler which was built at the facility.

The other project was working with the owner and operator of the airports around New York City, namely the Port of New York Authority. They asked my company, Bolt Beranek and Newman, to determine the maximum noise levels that jet-propelled passenger aircraft should be permitted to radiate when passing over neighborhoods surrounding their airports. I supervised this project and the result was that the first jet passenger airplanes were required to put mufflers on their engines and later planes had to be equipped with high-by-pass engines.

My efforts in recent years have been devoted to concert hall acoustics. In my 1962 book *Music, Acoustics, and Architecture* I published photographs and architectural drawings of 54 concert halls in 16 countries. Measurements of the acoustical properties of these halls were assembled from the files of my company and from leading acoustical consultants. That book was followed by a second book in 1996, *Concert and Opera Halls, How They Sound*, that covered 76 halls and which was published by the Acoustical Society of America. The most recent book, in 2004, is titled, *Concert Halls and Opera Houses: Music, Acoustics, and Architecture*. It covers 100 halls and houses. Through the years I have interviewed over 30 conductors and 20 music critics and from their statements I have rank-ordered 58 halls according to those person's perception of acoustical quality. No one has openly criticized these rankings. Since then, I have published papers, largely in *JASA*, on concert hall acoustics as new findings have evolved.

In conclusion, I am grateful to the Acoustical Society of America for their publications which have enabled me to exchange my findings with the research of others in the field. I enjoy the Society's biannual meetings where one becomes acquainted with colleagues and learns about their recent activities. I especially look forward to attending the ASA meeting in Boston, Massachusetts, in 2017.



Photographs courtesy of the Acoustical Society of America

Top left. Dr. Leo Beranek addresses the audience at the Plenary Session on October 30, 2014 at the 168th Meeting of the ASA in Indianapolis, Indiana.

Top right. Fall Acoustics Today guest editors Carl Rosenberg (left) and William Cavanaugh (right) pose with Dr. Beranek at the reception.

Center left. Acoustics Today Editor Arthur Popper presents Dr. Beranek with a framed cover of the fall issue dedicated to Dr. Beranek and his lifetime achievements, contributions to the ASA, and in celebration of his 100th birthday.

Center right. Dr. Leo and Gabriella Beranek.

Bottom. Michael Taroudakis, President of the European Acoustics Association, and ASA President Judy Dubno present Dr. Beranek with certificates from the EAA and ASA honoring him on his 100th birthday.