

Leo Beranek's Role in the Acoustical Society of America

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“What I cherish the most, and what I would most like to be remembered for, are the human connections I made in everything I’ve done.” - Leo Beranek

Introduction

Leo Beranek received the first 75th anniversary membership certificate issued by the Acoustical Society of America (ASA) at the 165th ASA meeting in Montreal in 2013. This commemorated Leo’s long-time association with the Society. This extraordinary relationship with the ASA, along with his love of acoustics, his willingness to volunteer, and his unparalleled administrative and management skills has resulted in a long list of benefits for the entire membership (Figure 1).



Figure 1. Leo with colleagues and friends at an informal reception honoring his 75th ASA Membership Citation during the Spring 2013 ASA Meeting in Montreal. Left to right: Nancy Timmerman, Felicia Doggett, Leo Beranek, Lily Wang, Michelle Vigeant, Lauren Ronsse.

It is not only Leo’s role in ASA we celebrate in this issue of *Acoustics Today*, but also the role that ASA has played in his life. This role began when Leo joined the Society in 1938. In writing this article I found the history of his successful interaction with the Society not only interesting, but also instructive for younger members who may be interested in advancing their careers in acoustics.

Reading Leo’s autobiography *Riding the Waves* (Beranek, 2008) reminded me of a lecture I heard a few years ago by the well-known physicist Freeman Dyson at a conference attended by about 800 undergraduates in physics. Dyson surprised students by encouraging them to not plan their careers but instead to be lucky, and more importantly, if luck happens to come your way, you should be prepared to take advantage of it.

A lucky break for Leo (and, as it turns out, for the Society) occurred when he was a student about to start his senior year at Cornell College in Mount Vernon, Iowa in August 1935. While strolling down Main Street, Leo came upon a Cadillac with a flat tire and a well-dressed rather glum looking driver standing by. While changing the tire, Leo exchanged a few words with the gentleman, an instructor at Harvard University, who was just passing through town on his way to Massachusetts. They discussed Leo’s plans for graduate studies, and Leo indicated he might delay graduate school for lack of funds. The instructor encouraged Leo to apply to Harvard, which Leo did in 1936, distinguishing himself in his first year by receiving all A’s.

Leo recalled that Harvard University “provided (F.V. Ted’) Hunt with funds in 1937 to hire a graduate assistant. A lucky boy from Iowa got the job, and went on to become Hunt’s first Ph.D.” (Beranek, 1969); as they say, the rest is history.

A Timeline for Leo’s Remarkable Century Riding the Waves.....

• Leo Leroy Beranek
Born: Solon, Iowa
(Sept. 15, 1914)

1910

1911

1912

1913

1914

Readers can find more complete information on Leo's extraordinary life in his autobiography *Riding the Waves* (Beranek, 2008). This article will focus on just one aspect of Leo's life, namely the mutual benefits that Leo Beranek and the ASA have enjoyed from a long and fruitful relationship. The article covers the following roles that Leo has filled over 75 years:

- 1) Leader
- 2) Organizer
- 3) Chair of Standards
- 4) Publisher
- 5) Mentor/Educator
- 6) Recognition by the Acoustical Society
- 7) Other Roles

As Leader

- Executive Council (1944-1947)
- Vice President (1949-50)
- President (1954-55)

Leo was instrumental in the formation of the Technical Council. This took over a decade to create from its original introduction to final approval via changes to the Society's bylaws. Leo rated his contribution as one of his most important accomplishments for the Society. The concept of having technical committees was discussed at the Executive Council beginning in 1941 but began in earnest in 1949 while Leo was serving as vice president (Atchley, 2004). The committees were initially formed on an ad hoc basis and they were asked to survey their membership to determine what their roles should be. In 1954, while Leo was ASA president, a proposal for a technical council involved eight technical sections which would meet for about three hours on one evening during meetings (Executive Council Minutes, 1954; Beranek, 2008).

Leo appointed the Committee on the Development and Promotion of the Society with Bruce Lindsay as Chair to consider this and other improvements for Society operations. The Committee provided definite principles for the formation of technical committees in 1955 (Firestone, 1956). Leo later became chair of the Committee in 1957, and in 1960 the Tech-

nical Council structure was finally formalized into ten technical committees by amending the bylaws (Firestone, 1957, 1958, 1959, 1960). This action was very important since a number of members from certain technical fields, especially psychological and physiological acoustics, had been threatening to leave the ASA if they didn't have more input into the Society decisions. Also there was a sense that "there was a failure on the part of the Society to meet the needs of scientific and technical personnel who were working in certain areas of applied acoustics" (Firestone, 1956, 1958; Beranek, 1989, 2008; Schmid, 2005).

Another innovation Leo brought to the Society while president was to have open meetings to allow members to have more say in the Society's operation. He did this since he felt that the Executive Council was becoming too closed and not listening to concerns from the general membership. To the surprise of many, Leo announced at one plenary session over which he presided that an open meeting would occur immediately after the plenary. Leo recalls a number of members "stepped forward to air pent-up feelings that, if held back, could have resulted in further splits of the membership" (Beranek, 2008).

Also during his term of office, the first issue of *Noise Control* appeared in January 1955. Leo had served as chair of the "New Magazine" Committee in 1953, and he later served as vice chair of the Editorial Board. *Noise Control* was terminated in 1961 but it can be downloaded from ASA's website at <http://scitation.aip.org/content/asa/journal/noise> (Firestone, 1956; Pierce, 2004).

As Organizer

- Chair of New York City meeting (May 1945)
- Participation in 25th and 50th Anniversary Meetings
- Co-Chair of 75th Anniversary Meeting

Volunteering to serve as an organizer of meetings is an important contribution to the workings of the Society. Any meeting chair will verify that this role takes a lot time and creativity. Leo more than qualifies as a meeting planner-extraordinaire, starting with chairing the 1945 meeting in New



• First day of school at one room schoolhouse in Tipton, IA (Fall 1919)

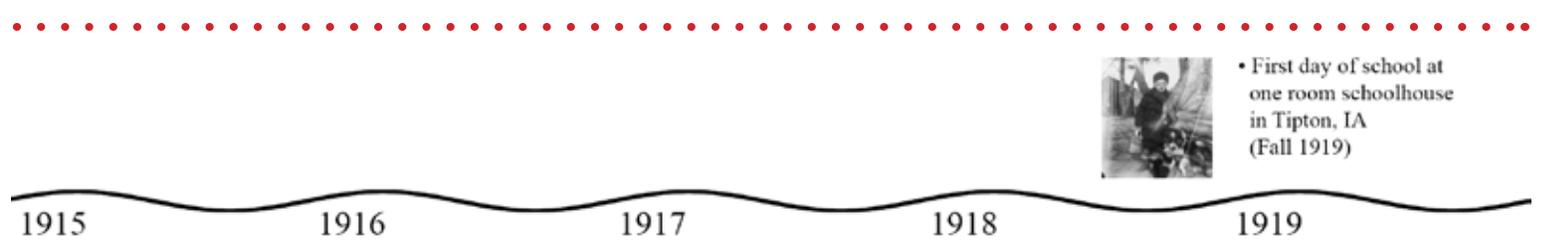




Figure 2. Leo Beranek, Co-chair of the 75th Anniversary Meeting, flanked by his co-chair Pat Kuhl and by Ken Stevens. (Photo courtesy of Thomas Beranek Haynes)

York City, assisting in the 25th and 50th Anniversary Meetings (held in 1954 and 1979 respectively), and co-chairing the 75th Anniversary Meeting with Pat Kuhl (shown with Leo and Ken Stevens in **Figure 2**) held in New York City in 2004.

Pat Kuhl reflected on Leo's efforts after watching the movie of the 25th Anniversary Celebration which was included in the DVD she helped create for the 75th Anniversary.

"I recently watched clips from the ASA's 25th Anniversary film from 1954 and recognized that the spry individual on that film was unchanged 50 years later when I collaborated with Leo on planning the 75th Anniversary Celebration; Leo's energy, brilliance, and attention to detail, which merited the President's Medal of Science in 2003, was put to work to help create the 75th Anniversary Celebration that was a total success by all accounts. Leo's exquisite skill and superb humor made it a pleasure to work with him. Leo Beranek, scientist/artist/man, is an incredible treasure to the ASA. Happy 100th birthday, Leo!"

The highlight of their collaboration was the "Celebration Day" which included a half-day of presentations at City Center by a number of young acoustical scientists followed

by a concert by a virtual electric orchestra; in the afternoon there was a tour of the Steinway Piano Factory and a boat trip around Manhattan Island.

The prospect of an electric orchestra prompted the local musicians' union to threaten to picket the event; fortunately they were talked out of it when ASA explained that this performance was experimental in nature and not a ticketed event for the public. As if this was not enough participation, Leo was also a co-presenter of the tutorial for the 75th Anniversary Meeting on "Listening to Acoustics in Concert Halls." He told me this was the last time he offered to volunteer for such a large scale event (he was just a few months shy of his 90th birthday in 2004).

The following is taken from the *Anecdotal History of the Program of the 25th Anniversary Celebration* from 60 years ago when Leo was president of the Society:

"A Time Capsule Custodial Committee has been appointed by President Leo Beranek to preserve safely the foregoing records from bomb and bookworm and bring them to the attention of the One-Hundredth Anniversary Program Committee or other interim committees. Each of these very healthy young men is now not over twenty-five years of age, and it is his duty to keep breathing for another seventy-five years in order to fulfill his appointed mission (Firestone,1954)."

Unfortunately none of the five appointees are still members of the Society. One copy of the 16mm film of the 25th Anniversary was originally stored at the Iron Mountain Atomic Storage Corporation in upstate New York. The film was transferred to the American Institute of Physics in College Park, MD (Schmid et al., 2004). A second copy was kept at the University of Michigan as a precaution against a widespread disaster. As noted above, sections of the 16 mm film were made part of a DVD for the 75th Anniversary *Celebrating Our 75th Year*.

Leo has written a 21-page summary of the planning and execution of the 75th Celebration and sent two copies of material documenting the efforts of the co-chairs for the 75th

.....

<ul style="list-style-type: none"> • After first year Leo travels to consolidated school in Tipton (Fall 1920) 		<ul style="list-style-type: none"> • Beranek family moves back to Solon, IA (1922) 		<ul style="list-style-type: none"> • Leo assembles a radio gift kit (Fall 1924) <p><i>Leo's lifelong fascination with electronics and communications begins</i></p>
1920	1921	1922	1923	1924



Figure 3. Leo Beranek and D. Y. Maa on receiving their doctorates from Harvard University in 1940.

Anniversary Celebration to ASA for a time capsule for the 100th anniversary meeting.

Leo also served as Chair of ASA’s Investments Committee from 1998-2000. Although not well known, this is one of the most important ASA committees since returns from ASA’s reserve fund support most of the Society’s outreach programs and special projects. Leo’s background and expertise in finances were important to the Committee’s operation. He also has served as a board member of Acoustical Society Foundation, and has personally provided financial aid which benefits the Society today.

As Chair of Standards

- Chair of Z24 Committee (1950-1953)

Leo served as chair of the Standards Committee Z24 from 1950 until 1953 after Vern Knudsen resigned (Firestone, 1954, 1955). Leo felt that “It was becoming obvious that ASA had to get involved in writing standards.” When I asked him about serving on this committee, Leo said, “This turned out to be a very interesting job because we produced a number of early standards.” The Standards program was eventually replaced by the three committees we know today: S1 Acous-

tics; S2 Mechanical Vibration and Shock, and S3 Bioacoustics. S12 Noise was added later (Firestone, 1956).

As Publisher

- 72 Peer Reviewed Papers in *The Journal of the Acoustical Society of America*, a (*JASA*) and 4 in *Noise Control*
- Books sold by ASA *Acoustical Measurements* (Reprint), *Acoustics* (Reprint), *Concert Halls and Opera Houses* (Springer), *Concert and Opera Halls: How They Sound* (Published by ASA), and *Riding the Waves* (MIT Press)
- Associate Editor (1950-1959)

Leo has published 72 peer-reviewed papers in *JASA*. The importance of his technical contributions contained in these papers is reviewed in other articles in this magazine. Leo’s first paper was co-authored by F.V. Hunt and D.Y. Maa from China (Hunt et al., 1939). Both Leo and Maa received their doctorates from Harvard in 1940 [Figure 3], and Maa has always referred to Leo as his “older brother” (Beranek, 2008). Like Leo, Maa was elected an honorary member of the Acoustical Society of America.

It is interesting to note Leo’s recollections in *Riding the Waves* regarding two of his very early papers: “Acknowledging re-

• In harsh winter of 1926, Leo’s mother dies suddenly
 • Beranek family sells farm in Solon, moves to Mt. Vernon

• Dad becomes co-owner of hardware store and encourages Leo to take correspondence courses in radio repair and wiring

• Part time radio repairing and other jobs allow saving funds for college at nearby Cornell College

• US banks fail in Sept 1929 starting the “Great Depression”

1925

1926

1927

1928

1929

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ceipt of the papers on June 1, 1940, *JASA* published them both in its July issue, setting the stage for my professional life.” This recollection emphasizes the importance publishing has had on his career and also sets a high standard for the time required to publish today. Leo’s most recent paper was published in the January 2014 issue of *JASA* (Beranek and Nishihara, 2014), 74 years after his first paper in *JASA*. After all these years, he told me he still “likes reviewers since they make a better paper.” He himself served as an associate editor of *JASA* for nine years.

When I asked Leo what motivated him to write a total of 11 books and an estimated 175 scientific and technical papers, as well as to give countless lectures and presentations at meetings around the world, he replied that he “has always wanted to tell the story of acoustics.” Anyone who has attended one of his lectures or classes, or read one of his papers or books, has to be grateful that he has always wanted to tell his stories on acoustics.

As Mentor/Educator

- Graduate students – Kenneth Stevens, James Flanagan¹
- Mentoring ASA members

Kenneth Stevens, Leo’s second graduate student at MIT, made the following observation during an oral interview:

“Shortly after I came to MIT as a graduate student, I began to work in the Acoustics Lab and I was invited to do that by Professor Leo Beranek. Even though, prior to that, I had not (had) any serious interest in acoustics, I developed that interest at the Acoustics Lab and I joined the Acoustical Society.” (Stevens, 2001)

James Flanagan was Leo’s third graduate student. When asked in an oral interview about the Acoustics Lab at MIT, Flanagan noted (Flanagan, 1997):

“The remarkable thing that was very ahead of its time was that it was a very multidisciplinary laboratory. Professor Bolt was a physicist, Professor Beranek was an electric-

cal engineer, and Professor Newman.... was an architect. They were the trio that formed the Bolt Beranek and Newman Company. I was one of their earliest employees. ... (The laboratory) had people from physics, mathematics, engineering, psychology, and architecture. All those folks worked in a very effective way.”

As president of Bolt Beranek and Newman (1953-1969), Leo played a tangential role in the Society. He told me that he strongly recommended that BB&N employees become members and attend ASA meetings, and that BB&N be a sustaining member of ASA. Interaction between ASA and acoustical companies, consultants, labs, and universities was, and is, an important part of the Society, especially for developing practical applications (including employment!).

Leo’s graduate students, Kenneth Stevens and James Flanagan, like Leo, went on to be elected presidents of the Society, were each awarded ASA’s Gold Medal and were recipients of the National Medal of Science. The latter award is based on nominations by ASA. A video of Beranek, Flanagan and Stevens receiving their National Medals of Science Awards from U.S. presidents may be found on the DVD *Celebrating Our 75th Year* produced by ASA.

Leo’s role in mentoring acousticians continues today. When I asked Lily Wang, a Fellow of the Society and R. Bruce Lindsay Award recipient in 2005, about her experience with Leo, she replied:

“Leo is a living legend in acoustics; I was so nervous meeting him for the first time 15 years ago when I was a budding acoustician, but I have found over the years that he has always been kind and generous with his time, attention, and easy smile, even to young awe-struck acousticians.”

Leo himself has been on the receiving side of mentoring. Leo was Ted Hunt’s first graduate student. Hunt told Leo that he must attend his first ASA meeting held in Iowa in the fall of 1939. Leo told me that “going into acoustics was because of Hunt.” Leo also presented a paper at the follow-

¹ Leo’s first graduate student was Dr. Jordan Baruch. He did not go into acoustics.

A horizontal timeline with a wavy line below it, marked with years from 1930 to 1934. Above the line, four bullet points describe key events in Leo's life. A small black and white photograph of a young Leo Beranek playing a drum is positioned between the 1931 and 1932 markers.

- Enters Cornell College (Fall 1931)
- Continues part time radio repair business, playing drums in local bands and saving for post graduate education
- At Cornell Leo and a fellow student develop a “for fee” recording business for students taking speech training classes (Fall 1932)
- After spring 1934 term takes full-time job at Collins Radio Co. to earn funds to return to Cornell for the spring of 1935

ing ASA meeting in the spring of 1940 at Washington D.C.. Philip Morse, a renowned acoustician and physicist, was in the audience, praised Leo's paper, and asked to receive a copy of it. This recognition contributed to Leo being awarded the second R. Bruce Lindsay Award in 1944 for members under 35. Leo noted that this award was "another big point in my life." In addition to Morse and Hunt, Leo was also in contact with other giants in the field of acoustics, including Vern Knudsen, Harvey Fletcher, and S. S. Stevens.

Recognition

Much of Leo's achievements have been recognized by the Society which presented him with the R. Bruce Lindsay Award in 1944, the Wallace Clement Sabine Award in 1961, the Gold Medal in 1975, and an Honorary Fellowship in 1994. Encomiums have been written for the latter three and may be found at the ASA's web site <http://goo.gl/9w3fdz>. Perhaps a few quotes from the encomium which accompanies Leo's election to Honorary Fellowship in 1994 will expand on the recognition he has received for some of his roles described in this article (Cavanaugh et al., 1994):

- "Leo is a leader not only in developing new knowledge, but also in applying such knowledge for individual and societal benefit."
- "The many who have profited from Leo's formal teaching as a professor in degree-granting courses, or as a lecturer in his continuing summer education at MIT and elsewhere know Leo to be superbly organized in presentations, to be perceptive of the learning process of students at all levels, and to be highly motivating as well as challenging for students."

Other Roles

- International Participation
- Networking

Leo has attended a multitude of national and international meetings on acoustics, many not being ASA meetings. However he listed the ASA as his most significant acoustical or-

ganization (Beranek, 2010). This combined with his role as past president of ASA, the deep respect for his knowledge of acoustics, and his interest in promoting international acoustics, has allowed Leo to serve as ASA's unofficial ambassador at non-ASA meetings, especially those outside North America. Indeed, he is slated to be a keynote speaker at the 40th Anniversary celebration of the founding of the (British) Institute of Acoustics to be held in Birmingham, October 15, 2014.

One example of international cooperation came during an ASA meeting which Leo recounts in his autobiography (Beranek, 2008):

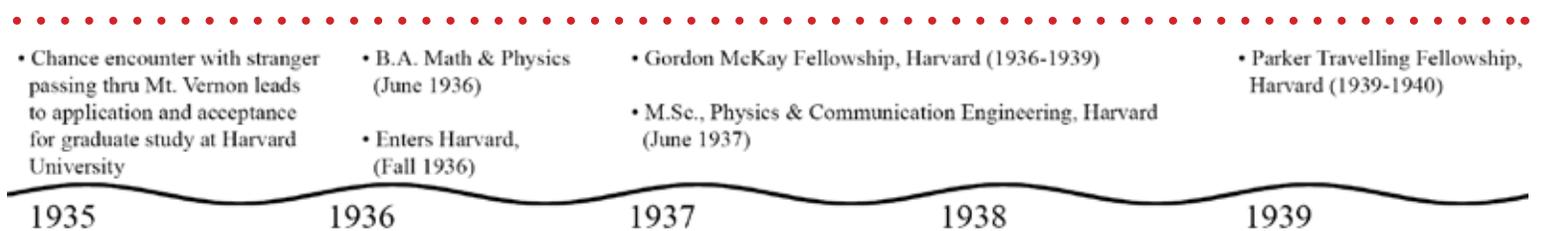
"The Acoustical Society of America met in Seattle in May 1988. I happened to be on a day cruise—one of the Society's planned recreational events—when a Japanese acoustical engineer, Takayuki Hidaka approached me...Although I thought nothing of it at the time, a month later, he wrote to say his boss was planning to invite me to consult on a new opera house project in Tokyo."

This eventually led to Leo consulting on six halls in Japan some of which he told me he considered his best work in architectural acoustics.

Leo points out that the Acoustical Society has played an important role in his life (Beranek, 2008):

"One of the greatest professional influences on my life, the Acoustical Society of America with current membership around 7,000, enables those in the field to share new technical findings at semiannual meetings and through its journal (*JASA*)."

I think anyone reading this article and other articles in this issue will find Leo's role in the Acoustical Society has tremendously benefited the field of acoustics, the Society, and all its members. Leo's final sentence in the Epilogue chapter in his autobiography *Riding the Waves* seems appropriate to end this article as well: "What I cherish the most, and what I would most like to be remembered for, are the human connections I made in everything I've done."



Acknowledgment

The author is indebted to Leo Beranek for responding to my requests for details of his participation in the Acoustical Society. My admiration for his ability to quickly locate documents is only superseded by how well he recalls information from memory.

Biosketch



Charles Schmid recently retired after serving 23 years as the Acoustical Society of America's first Executive Director. He has been a member of the Society for 50 years, and was the Society's Congressional Science and Engineering Fellow in Washington, DC in 1985-86. He received the

Distinguished Service Citation in 2008. He served on the board of the International Commission for Acoustics from 2007-2013 and as its vice president 2010-13. He also was on the Board of the American Institute of Physics from 1990-2013. He is a Fellow of the Society and an honorary member of the German Acoustical Society.

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- Joins Acoustical Society of America
- D.Sc. Physics & Communication Engineering. Harvard (June 1940)
- United States enters WWII (Dec 7, 1941)
- Director, Harvard Systems Research Lab and Electro-Acoustics Lab (1941-1946)
- Faculty, Harvard Instructor in Physics & Communication Engineering (1941-1943)
- First published book: *Sound Control in Airplanes* (1944)
- Doctoral Thesis: *Acoustical Measurements*

1940 1941 1942 1943 1944



Leo on the slopes

Down a Slippery Slope....

Some years ago I was in a lodge in Alta, Utah, looking forward to spending more time on a difficult High Rustler black-diamond trail when I noticed a familiar person in the lodge. Yes, it was Leo Beranek who also enjoyed the challenge of mastering black-diamond trails. Leo went downhill skiing with family and friends for over 50 years and only retired from the slopes 13 years ago (at age 87). Skiing for Leo was a serious commitment; in Switzerland he reached the status of a “Gold Badge” first-class skier. A note to remind us that Leo is as skilled outdoors as he is inside a concert hall.

James Barnes

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Early Photographs

Leo recently loaned to Tom Horrall and me more than one hundred color 35mm slides of BBN staff, offices and activities taken during the early 1950’s and at a 25th BBN anniversary dinner party. Leo also recorded an audio introduction to the slides and some discussion of consulting during the early years of BBN. Tom has made high-resolution scans of the slides. Both the photograph scans and audio introduction are available for download at the following location: <http://www.acentech.com/company/index.html>

(To view the photos, go down to the last paragraph at the bottom of the page where the three links are located. They are large files, be patient. We hope that you enjoy the files and this bit of early BBN history.)

Eric W. Wood

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A Life of Exploration and Discovery

Leo’s career in acoustics has been a patient journey of exploration and discovery. He has shared his journey with all of us who care about how spaces sound, especially in support of music. With a hundred years to spend exploring, one can be patient and diligent in one’s pursuit, and, like Louis and Clark, Leo has carefully ‘mapped’ his way through partially known territories and shared his discoveries while en route. His books have informed, challenged, and inspired. Many of us have joined him in parts of his journey and benefitted from the shared interchange of experiences.

Always curious and keen to find missing pieces to the acoustics puzzle, Leo has dedicated himself to defining and refining our understandings of room acoustics. (Growing up in a family full of centenarians is a great gift for someone who patiently ponders the unknowns and the almost-knowns in acoustics.) Leo is open to new insights and is eager to enhance his understanding of the ‘picture’ the acoustics puzzle is meant to portray of the ways we listen and hear and perform in spaces for music.

Leo is a force of nature, a source of insight, a colleague, and a friend. We are deeply grateful for his Methuselah genes and are looking forward to sharing and celebrating together his next decades of exploration and discovery!

Larry Kirkegaard

Kirkegaard Associates
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- Guggenheim Memorial Fellowship, Harvard & MIT (1946-1947)
- Technical Director, MIT Acoustics Laboratory (1947-1953)
- Assoc. Prof. Communications Engineering (1947-1958)
- Presidential Certificate of Merit for outstanding service in aiding WWII efforts
- First edition: *Acoustical Measurements* (1949)
- Bolt and Beranek Partnership, offices at MIT Acoustics Lab (1947-1950)
- First consulting project “The United Nation Headquarters, NYC”

1945

1946

1947

1948

1949

Honesty is the Best Policy (But not Always)

"Honesty is the best policy." That quotation from Benjamin Franklin--a hero to my father (Leo Beranek) for his keen intelligence and plain-spoken common sense--has always been at the core of my father's approach to his professional and personal life. Why be honest? Well, he would say to me, not only is it the right thing to be but others will trust you if you are. Good advice, which I have taken to heart all my life. But there once was a down side to this emphasis on honesty. In the early 1960s, my father was a guest on the TV show "To Tell the Truth." He and two impostors were questioned by a panel charged with determining who was the 'real' Leo Beranek. The trouble was, he was too honest. In answer to one question about acoustics, he spoke of the intensity of sound, something clearly way outside the dissembling abilities of the impostors. It was not a surprise, then, when the panel unanimously picked my father as the real Leo Beranek.

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An Unforgettable Meal in Paris

I was working in a French telephone factory in Paris during the summer of 1948. Leo came to town, and, as his student, I wanted to show him the highlights of La Ville Lumière, the City of Light. We went to the top of the Eiffel Tower for its magnificent view, and we went to the Louvre to see Da-Vinci's Mona Lisa. One evening, Leo treated me to a sumptuous repast at one of the top restaurants in Paris, La Tour d'Argent.

Although there were prices on the menu, the maitre d' recommended a special melon that was not on the menu. The meal was delicious; but the bill, that included an outrageous amount for the special melon, exceeded my monthly salary as a junior engineer. When we left the restaurant, Leo gave the doorman a coin as a tip. The coin was a leftover from the French currency used during World War II and was basically worthless. The doorman threw it on the ground uttering a loud expletive of disgust, which caused many of the bystanders on the crowded sidewalk to turn their heads and look suspiciously at the two Americans. Leo told me the next day that the meal had totally exhausted his supply of travelers' checks and he had to go to the bank for replenishment.

William Lang, x-BBN, retired
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My First Job Interview

After I left graduate school, my first job interview was with J.C.R. Licklider, who asked me to work over the summer of 1957 at BBN on a warning signal project before I started as an assistant professor at MIT. After I had agreed, Lick said Leo wanted to meet with us for dinner in Washington during the Acoustical Society meeting. I was very nervous about the dinner as I considered it a job interview. Leo, however, instead of giving me a grilling, entertained Lick and me with old stories, and we enjoyed a very pleasant dinner. The next day Lick told me that Leo had said OK. So I moved to Boston and began working at the oldest building in what became the BBN complex. After a couple of weeks there, Sam Labate asked me if I could stop in to see him after lunch to discuss my salary. He made me a very generous offer given that I had only just completed my doctoral studies. I had very much enjoyed the contact with the people at BBN during that summer so I accepted. The episode certainly illustrates the informality of BBN in those early days and the supportive atmosphere that Leo helped create.

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