



The

Broadcasters' Desktop Resource

www.theBDR.net

... edited by Barry Mishkind – the Eclectic Engineer

Remembering Leonard Kahn

1926 - 2012



On this page we invite you to share your comments and stories about Leonard Kahn. He and his inventions touched many in the broadcast industry. Want to share? [Please share your experiences and comments here.](#)

From Steve Gordon:

I do know that well before all of the fancy circuitry stuff we currently have, his Symmetra-Peak saved my butt.

We flipped WAIT - Chicago (820 at the time) format from beautiful music to talk. One of the new announcer/host voices was so asymmetrical he kept popping the AM transmitter off. It turned out that his positive voice peaks were much greater than anyone else in the world (my phrase). None of the other hosts came even close to his asymmetry. Back in the day we were using the Audimax/Volumax (AM version) combination and it just could not handle this guy. I asked around at an SBE meeting and tried all suggestions to no avail. At some point someone suggested that I try putting a Symmetra-Peak inline. I had an unused one in the basement. This magically solved my problem.

Thank you Leonard Kahn.

From Burt Wiener:

I had the same experience as Steve did with a particular announcer's voice. I put a Symmetra-Peak in the line right out of the console, and ahead of any processing. The Symmetra-Peak totally solved the problem.

I'm sorry I never had the opportunity to meet and get to know Leonard (Kahn). I agree with a lot of his engineering and admired him for being willing to say what was on his mind.

From Bill Sepmeier:

Leonard always came by our booth at the NAB, but only to talk to Muffy, whom he found intelligent and charming and much smarter than the rest of us in the booth. He was right. Again.

From John Dehnel:

Even before AM Stereo became something we could consider (KSL was the 12th AM Stereo station in the U.S.) we learned the uniqueness of Mr. Kahn.

In the 70's, as cross country program circuits became hard or impossible to get and ISDN was yet a dream, I was challenged to get a live performance of the Tabernacle Choir's "Music & the Spoken Word" show to CBS Radio from Rexberg, Idaho.

Mountain Bell & ATT laughed when I asked about a 5 kHz program circuit from there. Comrex had yet to offer their 2 line frequency extender. Mobile satellite was in it's infancy and we had no receivers anyway. We were about to give up when our sister station, KIRO, told us about an invention that Leonard Kahn had available called "Lines Plus." We obtained a loaner. Built into boxes that looked like something that the phone company would use this invention divided the program audio into bands and then shifted the lows up and highs down so they could be fed on 2 dial up lines. Skeptical at first, we tested the thing and sent it with the Choir's technicians.

Although we had a back-up taped show to feed to CBS if we had to, we got things connected and put the performance from Rexberg on the line to New York. I listened to it coming back on the 5 kHz CBS line and it sounded almost as good as it normally did from the Tabernacle. No one complained and I was a hero. That opened the door to our later employing Kahn AM Stereo, Powerside, A "Non-Symetramod." and even doing experiments sending and receiving data as part of the stereo transmission. Leonard never did forgive us for later getting on the HD bandwagon but he never gave up calling me his friend and urging me to get rid of that "disservice." Even after he moved to Florida he would call and bug me about it. But after haranguing about it, he always said I was his friend. He would say Ruth would have wanted it that way.

A talented, brilliant eccentric I'm better off for having known him. RIP, Leonard

From Dennis Ciapura:

Like Rich, I knew Leonard for decades and followed him through the AM stereo battles, the Motorola litigation and finally his decline after Ruth's passing. Leonard was an absolutely brilliant radio physicist, particularly in the area of wave theory. Most broadcasters don't know that Leonard held over a hundred communications patents and was the genius behind many innovations with military as well as commercial applications. In fact, his compatible single sideband technology (the heart of his AM stereo system) was used in the first generation of airliner telephones. Leonard never blew his own horn about his accomplishments.

Leonard's greatest personal strength was also his greatest commercial weakness. He was tenacious in sticking to his guns when he thought he was right, as in the case of AM stereo, but was probably the worst PR guy I've with whom I've ever been associated. I spent many hours trying to get Leonard to soften his approach and to abandon lost causes and move on, but that was not Leonard's style.

Like Rich, I also remember one dinner with Leonard and Ruth in New York. He had studied patent law and was representing himself in the Motorola litigation wherein he was attempting to prove that they had prior knowledge of the (his) art and were tortuous in infringing on his patents. It was eating him up and I could tell that Ruth was concerned. Finally I said, Leonard, I don't want to see you waste the rest of your life to end up a bitter old man like the Wright brothers. They were right too, but it didn't make any difference in the end. Ruth implored him to listen to me, but her pleading was to no avail.

Sadly, Leonard faded from the broadcast scene and the paranoia that first blossomed during the AM stereo war overcame him. When I last spoke with him he was retired in a small condo in Florida chasing all sorts of imagined conspiracies. We could not have a cogent conversation, and that was not the Leonard Kahn I wanted to remember. Leonard absolutely loved AM radio and his final project was a system that combined the propagation advantages of his double compatible SSB system with digital processing. He was convinced that this marriage of technologies would outperform IBOC. That was Leonard

From Dick Burden:

I was one of those fortunate to have known Leonard Kahn.

I had the pleasure of having dinner many times with Leonard and Ruth. Her passing had a profound effect on him.

Leonard's passion for AM radio and his understanding of the technology in one person will most probably never be seen again.

From Timothy Cutforth:

Leonard Kahn was my good friend for many years. I installed well over 100 of his PowerSide systems and nearly all of them were barnburner successes.

Unfortunately his patent lawsuit loss to Motorola which was first won on its merits then discarded regardless of the merits of the case in appeals caused Leonard to quit relying on patent protection and switch to trade secret protection. This was bad because he wouldn't even tell me what his new devices and modifications were supposed to do yet I was supposed to install them and certify that they were working properly.

Finally we had a falling out because a new gadget arrived inoperative yet he was sure I was not installing it correctly and for days had me doing obscure things like adding capacitors to the output of the console to eliminate DC offset, etc. The lack of basic info on what I was supposed to do killed our relationship and Leonard became very vindictive and belligerent that I was no longer capable of working my magic for him in installations while he kept me in the dark.

I still do not think there is a piece of Broadcast equipment that can hold a candle to his basic STR83 PowerSide. I mourn the broadcast industry's passage into HD radio which has turned out to be a halfhearted digital AM that has never come close to sounding as good as a properly set up PowerSide system. The coverage of HD is downright pitiful even in the daytime whereas a PowerSide really did double the nighttime coverage distance in more than 90+ percent of the installations I did.

Nearly all of the problems I had during the many years that I installed PowerSide systems for Leonard were related to the fact that they worked even better than Leonard's calculations said they should. Leonard wouldn't believe anything that he couldn't derive and calculate so because I couldn't show him a derivation of just what numerical improvement was possible we were stuck with his calculated "5 dB superiority" for independent sideband when clearly the coverage changes were indicating more than 10 dB difference in most cases. I think there are at least three or four improvement mechanisms beyond Leonard's analysis that have never been fully documented and now that we are abandoning analog for the future probably never will be documented.

So much genius...wasted on fighting in the courts instead of dedicated to improving the broadcasting that Leonard loved. And that is especially worth mourning.

From Chris Hays:

I don't feel I have much to add to what has already been said. I was part of the decision process that made KRLA the second Kahn station on the air in Los Angeles (the first was KHJ, and briefly a third KDAY).

I worked his booth at that first NAB convention where Magnavox, Kahn, and Motorola all had booths. It was my first experience with the brutality of corporations like Motorola. I also watched as radio station people who should have known better, fell for Motorola's line about all the receivers there would be. Apparently they all forgot that it had 20 years since Motorola had any presence in consumer electronics (and this was way before cell phones).

Leonard was always a gentleman to me, as long as we weren't discussing politics! I always suspected that secretly he really enjoyed jousting, which might explain some things. But he was a genius. He taught me things about the technology that frankly few broadcast engineers know or understand. The STR-84 exciter was a real marvel. Few realized that aside from stereo, it could make an AM transmitter put out almost anything you wanted it to.

Ruth was one of the nicest and sweetest people you would ever want to meet, and her loss was devastating to Leonard. He went into a decline after her death.

I had watched some of my neighbors deteriorate from the effects of dementia brought on by age, and it was hard to watch Leonard's deterioration into paranoia. This is common with dementia patients in large part due to the loss of short term memory: if you don't remember what was said yesterday, or even hours ago, your world stops making sense, and you see what looks like people lying to you about things they said yesterday because you don't remember.

But even through that, his mind was as sharp as ever about technology and the law.

He was a remarkable man. I feel privileged to have known him. We will not see the likes of him again. Rest in peace my friend.

From John Buffalo:

I always enjoyed and believed in Leonard. He was right on the AM Stereo issue. I too worked at XETRA with Rich Wood, and his system had been on the air there well before we reinstalled it about 1979 or so. I also installed his system on KSON-AM about 1987, and on the right Sony radio it really did sound good. As good as or even better than some of the San Diego FM's at the time, but on the right Sony radio.

The thing that I have in common with Leonard is the desire to pursue any inequity and have any fight that was for the right side of the argument, but he was far better at it than I ever was.

He was a great engineer, inventor, and person. RIP Leonard.

From Paul Christy:

I certainly do not stand in the same company as many here, as I'm neither an EE or a radio industry insider. I did, nonetheless, have occasion to spend some time with Mr. Kahn prior to his passing in 2012. You may recall his infamous website, which seemed to me more a tribute to his departed wife Ruth than anything else. He also carried a ream of his legal history that was in itself very incredible.

His long time acquaintances may have fallen out of contact with Mr. Kahn in that last year or so prior to his passing, so let me characterize the gentleman as alert, witty, savvy, and incisive. He could be brutally upbeat or downbeat, and although he admitted he was whipped in court he felt redeemed by his many enduring friends in the broadcast and electronics industries.

Whether he was factual or facetious in his attestations of loyalty and camaraderie, and the efforts so many took to keep alive his dream of hybrid radio, he never mentioned any associate as less than a true friend. Other than a few swipes at "corporate America", he seemed quite at peace with his legacy as "Pro Se Leonard". So cheers to all, and thanks for sharing.

From David, McCrok

Leonard Kahn was a dear friend of mine. I met Leonard at WFIL-AM in 1978. I was really impressed with his patents and ideas regarding Synchronous AM Transmission, and Independent Sideband Transmission.

Over the years I would see Leonard at engineering conferences and technical meetings. His comments were always of great interest to me. I have always had a great love for AM Radio and the potential of long distance communications. I also was quite interested in AM Stereo.

In 1996 I was hired by Network Broadcasting as Engineer in Charge at WBUX-AM and finished rebuilding the station. A Kahn Power side unit had been installed in 1992 on the old Continental Five Kilowatt Transmitter. We had removed a STR-84 from service because of a problem on the power amplifier module. I was also concerned about connecting the unit to our new BE AM-5 transmitter.

Leonard phoned me at WBUX, and asked me if I was using his power side unit. I explained to Leonard I did not want to complicate my transmission system with unneeded equipment. The new transmitter had a CQUAM exciter built in to it and we were using an Orban Optimod 9100B-2. The station was very loud and sound great. Leonard asked me if we had any problem reception areas. I knew of four areas that were in heavy reradiating environments where the modulation sounded really bad. These areas were located six to eight miles from the transmitter site and the signal should have been fine.

Leonard requested that I send him all the cards from his exciter and he would repair and upgrade our system at NO CHARGE. After the work on the unit was completed, Leonard gave me reinstallation instructions and sent Ira Saltzman to the station to guide me with adjustments. We completed the final connection and adjustments in about three hours. I wired the remote Phase Modulator Kill connection to my Gentner VRC-2000, remote control and was able to A-B test the Power Side in the field. The unit made a 60% improvement in our problem areas. I was really impressed!

A few years later, Leonard called me to help him with regional station field adjustments. In one station situation (WTEL-AM) the antenna system had a very high Q. The null off the rear and sides of the pattern caused severe sideband and carrier cancellation. The power side was installed and tuned up fine. The problem of carrier cancellation could not be corrected. Even with the one sideband enhanced, if it was being cancelled, there was little or no improvement. The client apparently removed the unit from service because of poor performance or no improvement in the nulls. Obviously, Leonard was upset. We talked about the situation and he finally conceded that the unit was not appropriate for WTEL. Leonard sent me a check for my help, even though we were unsuccessful! He was a real gentleman!

Over the years, I always enjoyed speaking with Leonard's wife Ruth. She would share with me Leonard's frustration and disappointment that his superior system was not adopted by broadcasters or the FCC. Leonard also felt that he had been taken advantage of by other manufacturers who had much more capital to spend on litigation!

Leonard and I had a falling out in November of 2003. I did a job for Leonard on a non directional, in Maryland near Washington, DC. The antenna system was combined with another station and the networks used were very high in Q. The transmitter was an RCA BTA-1S. I was not involved in the first attempt to connect the Power Side that apparently caused the transmitter to fail. The drive was apparently injected where the crystal connected to a unijunction transistor. The four Watts of drive destroyed the oscillator transistor.

When I arrived, the RCA was not operational. I connected the Power Side drive to the grid of the buffer tube through a .047 Ufd. capacitor and the rig powered up. The power side performed as expected, even with moderate Incidental phase modulation. I adjusted the IPM correction and was able to get about 22 db of separation. I met with Mr. Owner and the station manager. I don't think they were happy with the performance. Apparently the unit was returned, and Leonard felt that I was responsible for the loss of the sale. Leonard was not pleased and would not return any of my phone calls. I continued to speak with Ruth and continued to receive Leonard and Ruths Christmas cards.

Finally in November of 2005, I think, Leonard phoned and asked me if I could help him with a project in Florida. I had to decline because of other commitments. We did have a very cordial conversation and Leonard advised me that Ruth was in stage four of pancreatic cancer. He was still hopeful for a recovery or remission. She was being treated apparently with radiation or chemotherapy.

Ruth passed away on Christmas day. What a loss for Leonard and His state of mind. Ruth was truly a blessing for Leonard and all of us that knew her.

After Ruth passed away it appeared to be all Down Hill for Leonard. When I would call Leonard, I felt that I was bothering him. He told me he was deeply involved with CAM-D. I had a long pause in my communication with him.

I had little or no contact with Leonard until February of 2010. He was glad to hear from me and said that he felt abandoned by some of his other friends. He told me he had a nice big apartment at Fort Lauderdale, Florida. We would have many long conversations about Thermo Electronics, and other interesting topics.

I sent Leonard a few pieces of test equipment, and a power supply, an eight ampere twelve volt storage battery, and a thermal electric chip for him to experiment with. I also sent him an IAM Radio Systems Part 15 AM Transmitter. I was working on a special project for Radio Systems at the time and had acquired ten units as part of the project.

Leonard's eyesight was really failing him. He had trouble soldering and had a young lady he met helping him. I think her name was Maria. She would solder the red and black wires together and Leonard was pleased with the steam heater and / refrigerator we were able to build. I sent him a steam engine I had put together for him. He attached a thermoelectric chip hot side to the water tank of the steam engine and the cold side to a heat exchanger. The engine ran fine and there was cold on the other side of the chips heat sink. Leonard used this to experiment with his Peltier projects.

It was now May of 2010. Leonard requested an analog Volt/Ohm Ampere meter. I had a few units left from a project. I sent him two meters so he could measure current and voltage at the same time. In June of 2010 Leonard requested a cigar lighter plug cable kit so he could conduct his experiments in a mobile environment.

Over the next month or so Leonard seemed to be getting more confused, and I could see a profound change in his personality. He became very argumentative and was focusing on politics and how he hated to see what was happening to our great nation. I would be able to distract his negativity by asking

him questions about his patents. I would ask him to explain synchronous am transmission improvements, and he did in great detail. I was able to learn a lot about his invention that fixed the MUSH ZONE when using two or more synchronized transmitters. What an education. When he would start in on the political stuff again, I would ask more questions about Independent Sideband Transmission and Diversity Reception. Leonard had all this great stuff in his head and I am so glad he was willing to share his knowledge with me.

The time line is now August of 2010. Leonard asked me to provide a few more electronic components for a resistive 12 volt heater he was using to boil water for steam. He gave me the values of what he wanted and I provided the parts. I never heard if what he was building worked or failed. Again, he seemed to be losing interest in engineering and would get politically sidetracked.

We continued to communicate a few times a week. I would normally call Leonard from my office at WNPV-AM. I could talk with him and listen while I prepared automation logs and did my normal engineering duties.

The time line is now December of 2010. Leonard asked me for financial assistance on December 20, 2010, as he was being evicted from his Fort Lauderdale Apartment / Condo. I sent him an overnight UPS Letter with enough cash to get him by. He waited outside of his former condo building at 511 SE Fifth Avenue Fort Lauderdale, Florida for the UPS delivery. Can you believe UPS messed up the delivery and he had to wait another day for his envelope?

I could see that things were really starting to get bad. Leonard called me on December 24, 2010 and thanked me for the Christmas Gift! He said, David, I am not a poor man, I have quite a bit of GM stock and some other investments. It was really difficult for Leonard to ask for financial help. I could hear the disappointment in his voice. I suggested that he contact the Florida Department of Public Assistance. He would have no part of that at this time. He then got a room at The Seaside Motel in Fort Lauderdale. I asked him if there was any way I could help him. I determined that he could use some new cloths and underwear. I made a trip to Wal Mart and fulfilled the order.

Leonard said he could sue the condo association and management and get a big settlement because they evicted him. I asked him who was going to represent him. He said he could represent himself. Conditions got worse over the next few months. A friend of Leonard's called me on April 08, 2012, and gave me his new address at The Villa Rio Vista Assisted Living in Fort Lauderdale.

After a few weeks at this facility Leonard decided to leave (escape) and find another place to live. He moved to the Fort Pierce Inn, Fort Pierce Florida. The motel management was kind to Leonard, but the room rent had to be paid. Leonard was trying to get his social security sent to him at the Fort Pierce Inn. He told me that The Villa Rio Vista Assisted Living had commandeered his Social Security. I continued to encourage Leonard to apply for help with the DPA. I know there were other people who came to Leonard's aid, big time! Finally Leonard could no longer stay at The Fort Pierce Inn. He was given a chance to go to (or perhaps taken to)

The Amore Memory Care Facility at Stuart, Florida and received the care he deserved. He was now on a long term care agreement with the DPW and had a case worker who was looking out for him.

I would call Leonard every week or so and he was now very subdued. I offered to send him an Analog Radio with real knobs that he could tune. He declined and I noticed how quiet he had become. One of the nice resident care aides told me he really enjoyed our conversations. Leonard said he was well fed and well cared for. However he said he felt restricted because he could not do what he wanted when he wanted to do it!

I spoke with Leonard about two weeks before he passed away He was quiet and spoke softly. I was in

the process of preparing to have my shoulder repaired. I didn't have the time to do much talking on the phone. I only wish I could have spoken to Leonard just one more time. I had my rotator cuff and tendon fixed on June 15, 2012. For the next week I was really restricted on my activity.

Early in July 2012 a friend called me and told me of Leonard's passing on June 03, 2012. I was really taken back and saddened as I did not expect him to pass away so soon. However I am really thankful for the many enlightening conversations that I was privileged to have had with such a brilliant engineer and inventor. I will remember Leonard and always be thankful for his friendship.

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