

# The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

September 2019

Volume 25 Issue 09



## MEETING/ ACTIVITY NOTES

Reported by  
Marv Beeferman

**The ON-LINE Broadcaster**  
**The Jersey Broadcaster is now on-line.** Over 160 of your fellow NJARC members have already subscribed, saving the club a significant amount of money and your editor extra work. Interested? Send your e-mail address to [mbeeferman@verizon.net](mailto:mbeeferman@verizon.net). Be sure to include your full name.

A note of thanks goes out to our Technical Coordinator Al Klase for filling in at the last minute with a great AVC presentation at the August meeting. We decided to change our event schedule around a little to accommodate our homebrew contest/display program to take place at InfoAge in November and Al came through as usual.

I tried to make up for missing National Radio Day in August with an article in this month's *Broadcaster* (What! You never heard of National Radio Day?). However, there is another anniversary of note that the club might want to consider celebrating this year...RCA's 100th. Most people remember RCA as the firm that 100 years ago helped give birth to radio and later paved the way for television, broadcasting and recorded music but the company's responsibility for a host of other innovations remains unrecognized.

While today RCA is a shell of its former self, alive only as a trademark that's available for licensing, it's good to remember that "the technology invented back then still exists today," says David Sarnoff's grandson, Tim Sarnoff. "My grandfather looked into the future and made it happen."

For many years, the NJARC had the honor and pleasure of holding its monthly meetings and events at the Sarnoff Library in Princeton, New Jersey. Our gracious host and NJARC member, Dr. Alex Magoun, provided a comfortable and his-

**MEETING NOTICE**

The next NJARC meeting will take place on Friday, September 13th, at 7:30 PM at InfoAge. Directions may be found at the club's website (<http://www.njarc.org>). This month's topic will feature Ria Jairam (N2RJ), the ARRL's Hudson Division Director. She will discuss her duties with the ARRL and her personal interest in tube-based Ham gear. There will also be an auction of Ham radios, tubes and parts following the meeting.

toric setting that many of our older members fondly remember. Today, the library's collection resides at the College of New Jersey that recently held its National Radio Day exhibit (see how these things come together) titled "Wireless World: A Pop-Up Radio Exhibit." The exhibit featured all the radios in the Sarnoff collection and a special artifact from KDKA.

Another birthday celebration took place on August 26th for someone who you might be familiar with...Lee de Forest. He was born on that date in 1873. Between 1910 and 1920, he improved the Audion as a detector, amplifier and later as a transmitter. He started several radio stations and was an early, if not the first broadcaster of entertainment-based audio (opera) music. Between 1920 to 1930, he invented, patented and improved upon a system of recording a sound track on a strip of film, thus allowing accurate synchronization with a picture. You can find out more about de Forest on Mike Adam's web site [www.leedeforest.org](http://www.leedeforest.org).

Member John Stoll is back from his first Antique Wireless Association (AWA) conference and he says he had "a terrific time." For those of us who have been attending the event for a number of years, some consider the conference a shell of its former self. But for first time attendees, it's probably worth a visit to see for oneself.

John said that even though the flea market was limited, "I was able to find things I did not expect to be able to purchase." "The closure was the auction which I participated in with too much gusto! Very pleased with my purchases. Several radios, test equipment, parts - I personally won 16 auctions, only dropped out of 3."

John was also impressed by the presentations. "Discussions included

early transmitting tubes such as the W.E. 211 and its derivatives, British telegraphy, wire and tape recording, recent new speaker technology with audio demonstrations, de Forest audions and amplifiers, Paul Klipsch and his historic speaker development, telegraph and sounder development, Stromberg Carlson...spy radios of WW2 and even a discussion on the history and rehabilitation of Dynaco amplifiers." "I even got a personal demo of a speaker system that goes for approximately \$44,000 from its designer! Needless to say that was outstanding."

Member Bill Zukowski, who has been a constant supporter of the AWA conference for many years, was not able to attend but he was still the recipient of two awards - the "Conference Award" and award for his tireless work for the annual auction.

In a recent Communicator post, member Jim Whartenby recommends Jeff Duntemann's Junkbox for providing links to vintage data sheets for coils, transformers and other tube-era components:

<https://www.junkbox.com>

## Upcoming Events

- September 19-21 - Kutztown Antique Radio Swapmeet
- October 11th - Monthly meeting at Princeton's Bowen Hall; presentation by Mike Molnar (topic TBA)
- November 2 - Fall NJARC Swapmeet-Hamfest at Parsippany PAL
- November 8 - Monthly meeting at InfoAge building 9032A; homebrew contest and display.
- November 16 - Fall Repair Clinic at InfoAge (building TBA)
- December 4 - E-Board meeting
- December 14 - Annual Holiday Party at West Lake Golf & Country Club

**THE JERSEY BROADCASTER** is the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are \$25 per year and meetings are held the second Friday of each month at InfoAge or Princeton University. The Editor or NJARC is not liable for any other use of the contents of this publication other than information.

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## ANTENNA/GROUND REVERSAL AND SOME OTHER SIMPLE FIXES AT AUGUST REPAIR CLINIC

**By**  
**Marv Beeferman**

When John Stoll showed up with Greg Wilson's 1928 Radiola 60 (RCA's first AC superhet) at our August Repair Clinic, my initial reaction was that it would be a walk in the park to get this radio up and running. Although this model is approaching its 100th anniversary, its simplicity and workmanship has kept this reliable radio as a good performer (with minimum restoration) in the majority of cases where it hasn't been abused by storage in a poor environment. Although the radio lacked its speaker (typically, the Model 103), this was quickly resolved by an equivalent found in the shop.

We tested all the tubes and found them to meet minimum requirements. The radio was then slowly powered up using a dim-bulb tester, found to be OK, and all power supply voltages were in specification. There were two wires in the back of the radio and a makeshift antenna was hooked up to what was thought to be the antenna connection. Power was again applied and not a peep out of the speaker!

We did some visual troubleshooting and located a .005 mfd/400 volt paper capacitor in what appeared to be the IF section (seems a parts list for the 60 is not readily available and all values aren't identified on the schematic) that could be trouble, so it was replaced. (It later measured at .0047 mfd with 33 uA leakage at 400 volts so it was probably still good - amazing!) The radio was fired up again and still no response.

I really can't reconstruct the events that followed but somehow, the second "non-antenna" lead in the back of the radio was grabbed by John and the radio came to life. We were able to tune in three or four stations with good, solid sound and no distortion. Colorful moral of this story? Assumptions sometimes lead to red faces and green is not always ground!

Here's a couple of other things that went on that day.

- Not all problems can be solved by reversing an antenna connection. Bob Ben-

nett and Nevell Greenough worked on Paul Dooling's 1941 Zenith 6G601 AC/DC portable. This radio was produced as part of a series of "companion radios," battery operated portable radios like the Trans-Oceanics that received only the AM Broadcast band and were usually a little smaller and lighter. Pre-war 7G605's had a sailboat speaker cloth like the 6G601 that was changed to a B-17 bomber after the U.S. entered WWII.

The radio was dead on arrival with the problem localized to the filament string but not enough time was left to determine an exact root cause. The radio will go to Bob's home repair shop for more work.

- Jim Doran and Tom Provost worked on Jim's Model R1581, 1940 Silvertone tombstone and his Zenith B600 TransOceanic portable. The Silvertone was found with a jammed bandswitch, loop antenna problems and missing mounting screws. The Zenith had a broken dial cord and multiple other issues from improper repairs previously attempted. The Silvertone was brought back to working condition but the Zenith still needs a new dial and AC cord and reel, cleaning, and replacement parts. Jim found the session "enjoyable and instructive as always...thanks Tom!"

- Nevell Greenough attacked a 1938 Howard 450A communications receiver owned by Bob Maddox. This 12-tube radio covers 54-65 MHz in 6 bands. It was diagnosed with no high voltage as a result of an open filament in the 80 rectifier. After replacing the tube and fixing some additional mechanical problems, it was left in working condition.

- Irwin Sobelman's 1945 Westinghouse Model H-125 "refrigerator" radio was given as a promotion for buying a new Westinghouse refrigerator. Chassis number is V-2106. It only needed an alignment performed by Paul Hart.

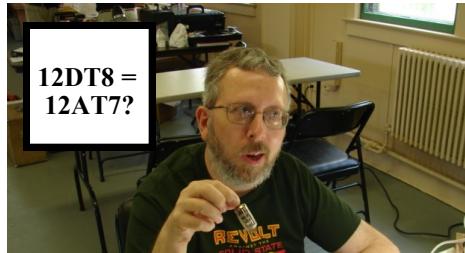
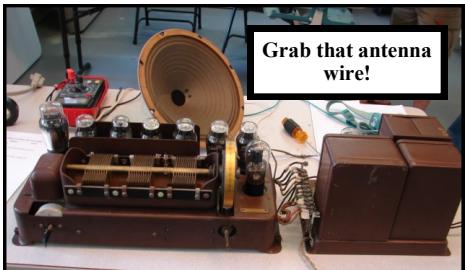
- Bill Zukowski and Joe Divito worked on Joe's 1961 RCA 1XF AM/FM radio. AM was found to be working but FM was dead. The FM oscillator and IF were checked and found to be OK. It was noted that the owner had previously replaced the FM RF amp with a tube from a working radio so it was assumed that the tube was good. After all obvious problems were exhausted, it was decided to replace this tube, a 12DT8.

There were no 12DT8's in stock. Joe noted that it was possible to replace a 12DT8 with a 12AT7. (Both tubes are dual triodes, but the 12AT7 is normally used for audio. However, it is good to 300 MHz.) To use the 12AT7, pin 9 has to be removed. (Pin 9 in the 12DT8 is a shield

between sections; in the 12AT7, it is the filament center tap for 6-volt operation.)

The 12DT8 was replaced with a 12AT7 with pin 9 removed and FM was restored. Electrolytics were also replaced, and the potentiometer and band switch were cleaned. It was noted that a major obstacle in servicing this radio was that the dial cord pulleys are attached to the rear of the front face. Therefore, the dial cord had to be removed to remove the chassis!

- Bill Inderrieden and Al Tomaczuk worked on Al's Philco 42-390 console radio. The "as found" condition was described as "ticking, noisy, no RF audio...AF stage most likely OK." The following weak/bad tubes were located: 6X5, 7A4, 7X7. The tubes were replaced but the overall problem still existed. The radio is awaiting the replacement of numerous paper de-coupling capacitors as most likely, the IF signal is being shunted.



## ANDREW ALFORD AND THE FIRST MASTER FM ANTENNA SYSTEM

By  
Marv Beeferman

I hoped you enjoyed John Schneider's two-part *Broadcaster* article on the development of the AM directional broadcast antenna. An upcoming event has triggered a look at another significant development in antenna technology. At the 147th International Pro Audio Convention, the Audio Engineering Society (AES) will re-create its 50th anniversary celebration of the master FM antenna at the top of the Empire State Building that occurred in 2015. As part of the event, an Alford antenna element will be on display

which was gifted to the AES. The Alford antenna array served multiple FM stations and millions of listeners.



An Alford antenna element like the one shown here, mounted on the Empire State Building, will be on display by the AES.

For those interested, the convention will take place at the Jacob K. Javits Convention Center between Oct. 16 - 19. Program sessions, exhibits, workshops and three floors of demo rooms will focus on such topics as studio recording, home recording, music production, electronic dance music, DJ live sound, theater sound, broadcast and streaming, networked audio, audio for virtual and augmented reality, game audio and sound for picture or product development.

Andrew Alford was born in Samara Russia in 1904. He graduated from the University of California in 1924. Most people are familiar with his balanced square antenna named the Alford Loop. It is essentially an omni-directional antenna consisting of four insulated conductors, each approximately one-half wavelength long, positioned in the form of a square in a horizontal plane and symmetrically fed by balanced lines at two diagonally-opposite corners of the square.

Alford also invented and developed antennas for radio navigation systems, now used for VHF omnidirectional range and instrument landing systems. His Alford Manufacturing Company offered numerous antenna designs for TV and radio broadcasting. But he is probably best known for his association with the Empire State Building's Master FM Antenna.

By the fall of 1959, nearly 20 FM stations were operating in New York City. With five stations already transmitting from Empire State and six others expressing an interest in using facilities on the building, the possibility of a commonly shared FM antenna arose. Rather than simply tack on antennas one by one, it seemed advantageous to investigate the

possibility of a master antenna. The Empire State Building Co. asked Dr. Frank G. Kear (part of the engineering team that worked on the building's 1950 antenna array) for an opinion on the possibility of a master FM antenna. He recommended a feasibility study which was undertaken by the Alford Manufacturing Company. Dr. Kear and his associates then began design, in conjunction with the testing and construction of several scale models by Fred Abel, Andrew Alford, Harold H. Leach, and Nelson R. Powers, all of Alford Manufacturing Co.

In March of 1965, three New York FM stations agreed to lease space on the proposed master FM antenna. Shortly thereafter, construction of the array was begun by Alford Manufacturing. Space on the mooring mast was limited - the best available location seemed to be the stainless-steel bands surrounding the 102nd-floor observation deck. Through the use of a scale model, various combinations of 8, 12, and 16 dipoles were tried, until tests proved 16 to be the optimum number for each bay. This configuration provided the required circularity in the horizontal plane together with a VSWR of less than 1.10 to 1 from 90 to 108 MHz and less than 1.20 to 1 from 88 to 90 MHz.

Dual polarization was incorporated into the antenna by orienting each dipole 45 degrees away from the horizontal. Each dipole was fed 22.5 degrees out of phase with respect to its neighbors; this arrangement was found to give satisfactory patterns and a low standing-wave ratio. The dipoles were arranged into groups of four, each group being fed by one element of a four-way fork. Each bay contained 16 dipoles, and there were 2 bays. A transfer panel allowed feeding both bays, or either bay in case of an emergency.

Each station was connected to the antenna through a multiplexer which offered a high degree of attenuation to all frequencies except that of the input station. All multiplexers were connected in a line, and beyond the last station was an extra, unmultiplexed input. If any station's multiplexer should be put out of service, that transmitter could be coupled to the last input for emergency operation. Normal isolation from transmitter to transmitter varied from 26 to 55 dB. The antenna could accommodate 17 stations of up to 10 KW.

On December 9, 1965, WQXR-FM became the first station to begin transmitting from the master FM antenna. During 1966, seven more stations installed transmitters in the building and used the

master array: January, WHOM-FM; February, WLIP-FM and WOR-FM; March, WBAI and WNCN; September, WNYC-FM and WPIX-FM. On February 1, 1967 WRFM became the ninth station to transmit from the master FM antenna.



The Alford antenna showing its 32 elements arranged in two rings above and below the observation gallery on the 102nd floor.

The significance of the Alford antenna was that instead of operating at lower power from various rooftops and hilltops around the city, for the first time, multiple FM stations could operate at full power from a single shared antenna system. As a result, signals of more than a dozen top New York Radio stations could be carried to tens of millions of listeners in the tri-state area.

In the 1990s, a new master antenna was built on the Empire State Building by Electronics Research, Inc. (ERI) and today the original Alford antenna is used in a backup capacity only. It was pressed into service after 9/11 to provide emergency replacement antenna capacity for stations that were displaced from their World Trade Center sites. In 2017, assembly began on a three-bay auxiliary master FM antenna and new combiner for the ERI antenna. Designed to serve all 19 of the FM stations that called the building home, the antenna was designed to closely replicate the coverage from the two-bay ERI master antenna and a one-bay "minimaster" antenna.



Antenna combiner system for FM stations at the Empire State Building.

## HOW AMERICA GOT ITS FIRST BLACK RADIO STATION

By  
Teresa Bitler

*The following first appeared in *Atlas Obscura* on June 18, 2019 and later carried in *Radio World*...Ed*

Although nearly 10 percent of the United States's population was African-American following World War II, you wouldn't know it by listening to the radio, the main form of entertainment at the time. White voices, almost exclusively male, dominated the airwaves. Even the actors portraying the African-American leads in the popular *Amos and Andy* radio program, Freeman Gosden and Charles Correll, were white.

White men owned the nation's radio stations, too, and they programmed for white audiences. As a result, mainstream radio stations sounded very similar, which is why WDIA struggled to find an audience when it became Memphis' sixth radio station in June 1947.

Like its competitors, WDIA initially featured white male radio personalities playing country and pop hits that appealed to white listeners, like "Smoke! Smoke! Smoke! (That Cigarette)" by Tex Williams and "Time After Time" by Frank Sinatra. Similarly, its news and commentary reflected the interests of white Memphians even though roughly 40 percent of the city's population was African-American.

Facing bankruptcy in October 1948, WDIA's white owners, Bert Ferguson and John R. Pepper, realized they had to take a risk if they wanted to save their station. Instead of focusing their entire programming on white listeners, they decided to introduce a half-hour show aimed at "a big segment of the population that had musical tastes and community needs that were not being answered," according to Ferguson in a recorded interview 20 years later.

*Tan Town Jubilee* premiered that October with Nat D. Williams, an African-American syndicated columnist, high school teacher, and local talent show host, playing blues records from his own collection. Aside from a few initial bomb threats from whites, it was well received. In fact, so many African Americans tuned in to listen to "Nat D." that WDIA rapidly rose to the number two spot in the market.

In an interview with the Memphis Rock 'n' Soul Museum, singer and WDIA personality Rufus Thomas likened the program's debut to when Jackie Robinson broke the racial barrier to become the first African American to play in Major League Baseball. For the first time, what African Americans in Memphis heard on the radio, in that half hour, was a reflection of their community.

Toni Bell, who grew up listening to WDIA and worked at the station in the 1980s, says hearing Williams, Thomas, and other African-American personalities on the radio meant so much because no one on the air before spoke directly to their community or addressed the issues that concerned them.

Realizing they had tapped into something, Ferguson and Pepper expanded the station's African-American content. One new blues and R&B program in the line-up, *Hoot and Holler*, opened with Thomas saying, "I'm young and loose and full of juice. I got the goose, so what's the use?" Within a year, WDIA had entirely converted to African-American programming and quickly became the number one station and the first to gross a million dollars annually in Memphis.

Bell explains it wasn't just the music or even the personalities that made WDIA such a hit in Memphis and throughout the Mississippi Delta region when the station increased to 50,000 watts in 1954. It was the shout outs. "People tuned in to hear if the DJ would mention seeing them on Friday night," Bell says. "Or, the DJ might say, 'I went to so-and-so barbecue in town last night.' That was better than any advertising they could purchase."

"Goodwill announcements" - service announcements for lost people and personal items - were extremely popular, too. Ferguson said in the recorded interview he initially thought they were a waste of time because only the person who lost the item and the person who found it would be interested. But he discovered that people throughout the Mississippi Delta felt a vested interest in seeing that person get their item back. At one point, though, he admitted he thought the announcements had gotten out of control, and he chided the person handling them for broadcasting about "all the umbrellas that were lost in Memphis. She reminded me that a five-dollar umbrella is a pretty important item to someone with a low income," he said.

Even though white management didn't always relate, WDIA was committed to helping the community financially. It fundraised for little league teams, college

scholarships, and other needs. In 1972, when Chuck Scruggs became the station's first black general manager and vice president, WDIA even helped raise money to create the National Civil Rights Museum, revitalize Beale Street, and preserve the Lorraine Motel where Martin Luther King Jr. was assassinated.

The "Starmaker Station" also launched careers and influenced American culture at large. Riley B. King told WDIA in an on-air interview that when he heard about WDIA, he boarded a bus to Memphis and walked 20 blocks in the rain to cut a record at the station. He was met by Ferguson who told him the station didn't make records but asked if he could write a jingle for a new medicinal product, Pep-Ti-Kon. King started singing, "Pep-Ti-Kon sure is good. Pep-Ti-Kon sure is good. Pep-Ti-Kon sure is good. You can get it in your neighborhood." Ferguson hired him on the spot, and King adopted the on-air persona of the "Beale Street Blues Boy," which, over time, was shortened to B.B. King. The legendary musician credits WDIA with helping to make him a star.



**Musicians at the WDIA radio station, circa 1954. (Pictorial press Ltd/Alamy stock photo).**

Other stars got their start thanks to WDIA. Thomas recorded Sun Records' first hit, "Bear Cat," while working at the station, and both his daughter, Carla Thomas, and Isaac Hayes, known for the *Shaft* soundtrack, were both discovered by WDIA's *Teen-Town* singer program. Even Ike Turner performed at WDIA-sponsored talent shows and benefited from on-air promotion.

The station's influence spread in other ways. Radio stations from other parts of the country came to Memphis to learn how they might be able to duplicate its success in their cities. Some even hired away their talent. Maurice "Hot Rod" Hulbert Jr. became the first full-time American on-air personality in Baltimore and Martha Jean "The Queen" Steinberg, who moved to Detroit, became the first

African-American woman to own a radio station.

While WDIA targeted the African-American community, white America listened, too, and some of those white listeners, like Elvis Presley, began to emulate, or appropriate, the sound they heard on WDIA. Many traveled to Memphis to cut records, popularizing rock 'n' roll and leading to its takeover of the airwaves.

As society became more integrated in the 1970s, the station lost some of its uniqueness, but if you're in Memphis today, you'll still hear WDIA on the air, playing classic R&B and soul. The station is also still active in the community and holds up as an example to students of how they can make a difference in their community through music and social responsibility.

## BITS AND PIECES

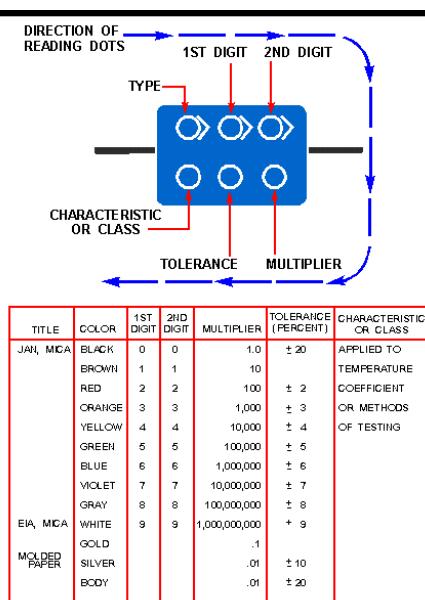
By  
Mary Beeferman

On Sunday, June 9th, the *New York Times* published a special section titled "Behind the Curtain - Inside the Dressing Rooms of Broadway - Then and Now." One 1924 photo really struck a nerve - it shows Eddie Cantor, the popular vaudeville comedian, dancer and singer backstage during the run of "Kid Boots" tinkering with what was described as a "radio suitcase." I was aware that these types of radios existed during the 20s but never saw this model...any takers? (Note the sign above his head: "Don't spit out the window. The doorman is below.")



The Michigan Antique Radio Club's quarterly "Michigan Antique Radio Chronicle" has been running John Reinicke's entertaining and informative *Notes from the Service Shop* for many years. In his 106th edition, John touched on a subject that I was not aware of and would like to share with you.

I was always under the impression that mica capacitors were pretty reliable and, in the majority of cases, were not prone to leakage. However, John pointed out that there were paper capacitors made in the same package. He cautioned that it's important to carefully examine the six color dots. If the first dot, in the upper left hand corner is black or white, the capacitor is mica. But, if the first dot is silver, the capacitor is paper and very susceptible to leakage. Black stands for JAN or military grade mica, white stands for EIA or commercial grade mica and silver stands for paper. If the capacitor does not have 6 dots and only has 3 or 4, it is certainly a paper one.



While we're at it, we might want to do a quick review of the numbering system. The 6-dot capacitors have the dots numbered in a peculiar manner where the top row goes to the right but the bottom row goes to the left (see above figure). The capacitor is held so that the three arrows point left to right to determine the type and value of the capacitor. The leftmost dot is the first dot at the base of the arrow sequence which represents the capacitor type. This dot, as stated, is either black, white or silver or the same color as the capacitor body. The first and second digits of the capacitance value are represented by the two dots to the immediate right of the type. The multiplier to be

used is represented by the dot at the bottom right. The tolerance value of the capacitor is represented by the dot in the bottom center.

Finally, here's a bit of humor provided by member Marsha Simkin that reminded me of the numerous AC adapters that turn up at the museum repair shop as part of donations. Marsha thinks it was originally published in the *New Yorker* and drawn by Tom Cheney:



"One day, son, all of these perfectly good A.C. adapters, which have long outlived the products they were originally designed for, will be yours."

## RADIO, AS STRONG AS EVER

By  
Andrew Langer

Unless you were paying close attention to some passing references in the NJARC Communicator - on August 20th, National Radio Day pretty much sneaked by. But don't let it upset you too much - you also missed National Chocolate Pecan Pie Day on the same date. In order to give the celebration its due respect, I'd thought you'd appreciate the following article by Andrew Langer. It originally appeared in the August 27th "Washington Times" and later in "Radio World." Mr. Langer is the president of the Institute for Liberty and the host of "The Andrew Langer Show" on WBAL NewsRadio 1090 in Baltimore... Ed.

National Radio Day just passed, and while, for years now, so-called "experts" have predicted radio's demise, as someone

who works in the industry as a host (and has been an avid consumer of radio for decades), I see firsthand every day how the medium impacts the lives of the American people in distinct, meaningful ways.

It's been nearly three-quarters of a century since FDR's fireside chats, but radio remains one of people's favorite platforms for receiving news and political commentary, as well as for expressing their personal thoughts and views. Now, however, some in media circles are dismissing the relevance of the radio, projecting that music streaming services will ultimately bring about its demise.

For example, earlier this month, CNBC published an article featuring quotes from Larry Miller, the director of New York University's music business program, which made the case that Spotify, Pandora and the like may cause the radio to fade away in as little as one decade. As is the case with many hot takes in the media today, Mr. Miller's doom-and-gloom analysis lacks regard for basic facts.

The statistics show that today, over 80 years after the radio's rise to prominence, the platform continues to hold the largest weekly reach of any platform. It is still heard by 92 percent of Americans over the age of 12, including 90 percent of young people. These numbers have hardly budged since the 1970s. By comparison, TV weekly reach has declined to 87 percent for the U.S. population at large.

Do these figures signal the inevitable death of an industry? Hardly.

In the past, Mr. Miller has worked with the National Music Publishers' Association (NMPA) and Nashville Songwriters Association International (NSAI). He may be an expert when it comes to music policy, but he's certainly not one on the radio.

While music industry giants like the ones Mr. Miller have worked with have likely been affected by the \$2 billion in revenue the music industry lost from 2005 to 2016, radio has remained as strong as ever. Which begs the question: Why?

Well, music isn't the backbone of radio. It thrives not due to the mere playing of songs for people to hear - but for two reasons: First, the connection that the listeners have to the people or medium playing the music; and second, for the "theater of the mind" that radio creates. A radio host has enormous power - their content having an "express lane" directly into the cerebral cortex.

For example, one of my guilty pleasures each weekend remains the rebroadcast of episodes of the late, great Casey Kasem's "American Top 40." AT40's

popularity stemmed as much from the love fans had for Kasem himself as it did from the music he spun. He felt like a distant family member to an entire country, which was drawn to his homey, down-to-earth personality. That's why, five years after his death, people like me are still listening to his show through syndicated tapings. While they can listen to their favorite oldies anywhere - from Spotify to YouTube - there's only one place they can get Casey.

It's why, as I'm coaching young DJs on college radio, I reiterate this point: Music fans can get their music fix anywhere. But they're tuning into you and your show because they want to hear what you're playing. They want your connection to this music.

And this stems from what I was taught as I was coming up in talk radio - people are tuning in to hear your opinion. They may not agree with it, but they want to know what is honestly on your mind. The more of you that comes through, the more they can interact with you and what you're saying, the more they will tune in.

And that is how you create a radio family: Honesty, interactivity and respect.

For example, since the first days of my own radio show, I've had people who I consider regulars. People who call in or email me, message me on social media, or text the show directly. These individuals feel like family members to me, and I believe that the feeling is mutual. At the same time, I continue to get a large number of calls from millennials who are just getting into politics and utilize my show and the interactivity as a way to formulate their viewpoints. These people feel welcome and accepted thanks to my show and many others.

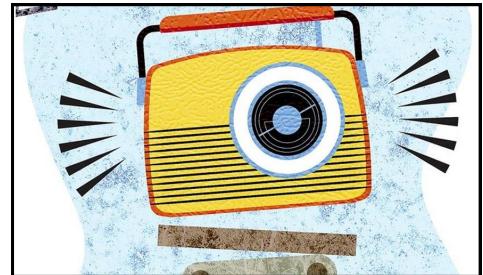
One doesn't get this same type of engagement with streaming services. That interaction with a live person is essential. While streaming services demonstrate the best of American innovation and serve a valuable purpose, they are strictly transactional and do not provide the audience with direct connections. That's why as roughly 70 percent of the leading streamers' listening comes from just 3 percent to 5 percent of its total audience, radio continues to get 70 percent of its listening from 35 percent of its total audience.

If I was forecasting the long-term health of a business, I would take the one with a broad base of loyal listeners over the one that's dominated by a few, which will likely abandon the service once the next best thing comes around.

The doomsayers, the so-called "experts," have been predicting radio's

death for decades now. They did so during the rise of vinyl, 8-track, the cassette, MTV, the CD and even the iPod. They have been wrong before, and over time, they will be proven wrong again.

Anti-radio pundits can predict the end of the world all they want. But as someone who is both a fan and a content-producer, I think it's clear: Radio has a long life ahead of it.



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*Fred Jacobs founded Jacobs Media in 1983 and quickly became known for the creation of the "Classic Rock" radio format. In one of his blogs, he noticed that National Radio Day also sneaked up on him:*

*"I went back into this blog's archives, and apparently, I have not recognized National Radio Day in several years now. And because I am a fan of radio, it just made sense to shine the light on our favorite medium, one that is approaching its 100th birthday."*

*As a result, Mr. Jacobs decided to celebrate the day with a series of quotes from the famous beneficiaries of the radio medium. You might find some of them quite amusing and, as a radio fan, you might find others somewhat poignant:*

**"I'd sit alone and watch your light, my only friend through our teenage nights, and everything I had to know, I heard it on the radio."** (Freddie Mercury, Roger Taylor lyrics)

**"We wanted to write great songs, we wanted them to get played on the radio, and we wanted to be popular."** (Don Henley)

**"When my song came on the radio for the first time, that was one of the heaviest things I remember."** (John Oates)

**I loved being on the radio. Being paid to talk? It's like being paid to eat."** (Rachel Maddow)

**"Classic Rock radio gave us our longevity."** (George Thorogodd)

**"Basically, radio hasn't changed over the years. Despite all the technical improvements, it still boils down to a man or a woman and a microphone, playing music, sharing stories, talking about issues - communicating with an audience."** (Casey Kasem)

**"I watch a lot of baseball on the radio."** (Gerald R. Ford)

**I was always fishing for something on the radio. Just like trains and bells, it was part of the soundtrack of my life."** (Bob Dylan)

**"We've been really lucky. We've gotten a lot of airplay over the years. I guess people keep requesting our songs on the radio, because Lord knows I don't do a whole lot to promote myself."** (Bob Segar)

**"Radio - nothing but a fart in the wind."** (Shiela Sorvari)

**"They say you better listen to the voice of reason. But they don't give you any choice 'cause they think that it's treason. So you have better do as you're told. You'd better listen to the radio."** (Elvis Costello)

**"In radio, you have two tools - sound and silence."** (Ira Glass)

**"It's not true I had nothing on. I had the radio on."** (Marilyn Monroe)

**"I make no apologies for being a huge fan of radio songs."** (Keith Urban)

**"With radio, the listener absorbs everything."** (Bob Edwards)

**"My love of radio started when my mom gave me my first crystal radio, one you plugged in your ear and grounded with an alligator clip to an outlet in the wall. I fell asleep every night with that radio stuck in my ear, listening to WIRE in Indianapolis."** (Art Vuolo)

**The radio was shouting at you, pleading with you, and seducing you."** (David Byrne)

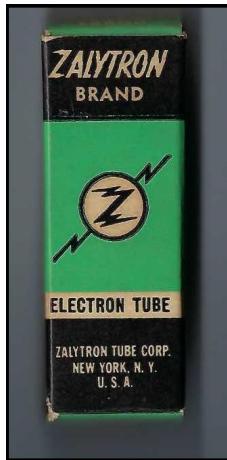
**Radio is such a perfect medium for the transmission of poetry, primarily because there just is the voice, there's no visual distraction."** (Billy Collins)

## COLLECTING TUBE BOXES

By  
Marv Beeferman

The prices of vintage tubes may be beyond the budget of many collectors but the boxes that enclosed them may be a more reasonable and overlooked target. The colorful artwork and interesting names and slogans ("Nuther tube if this doesn't work") of tube boxes from the early 20s is especially appealing and there is a lot to choose from. (See George A. Fathauer's *Radio Tubes and Boxes of the 1920's*.) Bro. Patrick Dowd started a list of 201/A brand names for the AWA's *Old Timer's Bulletin* and it has since grown to over 500 entries. An interesting adjunct to collecting the box itself is investigating the history (in many cases, short lived) of the company associated with it.

Earlier tube boxes in good condition are somewhat rare but some interesting ones still exist from later years. Here's a few that came out of donations to our tube program:

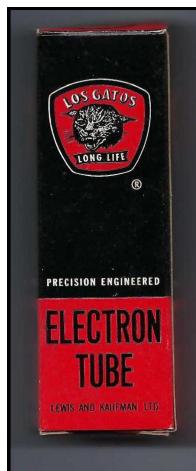


Zalytron began supplying tubes around 1956 under the name Zytron and early tube boxes have the ZYTRON name. One investigator has speculated that the name change possibly came about because there already was a British company that was supplying tubes named Zytron or perhaps the Zalytron name was closer to the founder's family name. The company did not manufacture tubes but were rebranders getting the tubes from wherever they could. However, Zalytron was not a tube washhouse.

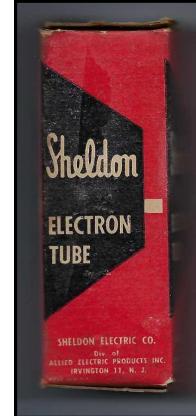
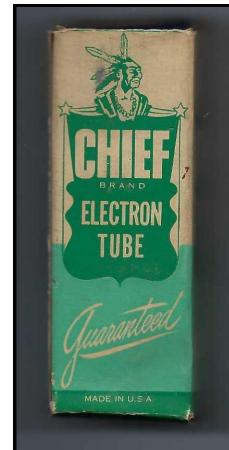
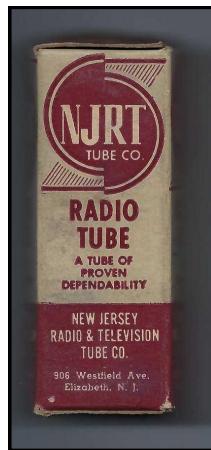
I have a 1961 catalog from the Zalytron Tube Corporation with an address of 220 West 42nd Street. It not only offers tubes but numerous radio, audio and TV equipment, components and accessories. With the exception of breakage or "burnouts," the company guaranteed their tubes for one year and offered a 10-day exchange or refund policy.

As a company, at one point, Zalytron offered high power stereo speakers as

their primary product but it appears they are no longer in business..



The bottom of this Los Gatos tube box identifies the supplier as Lewis and Kaufman Ltd. (L&K). Ludwell Sibley talked about this company in the February 2009 *Tube Collector*. Jack Kaufman associated with Garrett Lewis in 1946 to form L&K with an 11,000 square feet of leased space in Los Gatos. They made exclusively small and medium-size glass transmitting tubes of types developed by other companies such as the 4-125A, 250TH, 3C28, 4E27, 8020 and perhaps 15 more. They did no development work and didn't add any additional types to the Los Gatos line as time went on. Kaufman and Lewis left the company in the late 50s and tube production was stopped in 1962. Later on, Marshall Electronics bought the company and apparently made and rebranded tubes for a while. According to Sibley "Somebody must've bought the rights to the name...The L & K Ltd. name is part of the transition."



Three typical tube boxes from tube rebranders. The NJRT product is local with an address of 906 Westfield N.J. The Sheldon tube is sold by the Allied Electric Products division with an address of Irvington, N.J. The Chief tube has no identification other than "made in U.S.A."