THE ANTIQUE RADIO CLUB OF ILLINOIS

ARCI NEWS

www.antique-radios.org

Affiliated AWA
Antique Wireless Association

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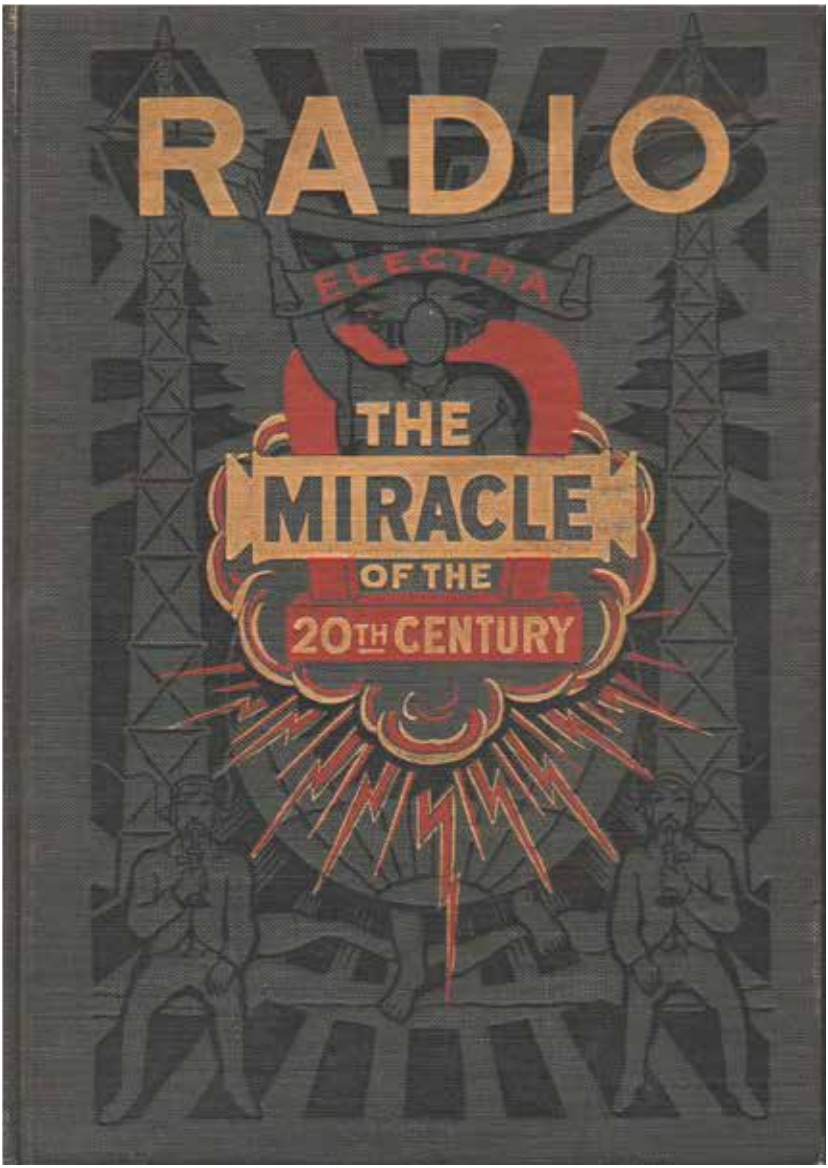
June 2021



Book Cover - published 1922

ARCI LIVE ONLINE VIDEO MEETS

MONTHLY LIVE ONLINE MEETINGS CONTINUE
Generally, 3rd Saturday of the Month

10AM – 12 NOON CENTRAL

THE AGENDA FOR EACH LIVE ON-LINE MEET IS ISSUED JUST BEFORE THE EVENT

Upcoming ARCI MEET SCHEDULE

SATURDAY, June 26, 2021, 10AM CT
10:00 AM CT – noon CT. (Zoom meeting opens 15 minutes before)
Register at
https://zoom.us/meeting/register/tJIrceisrj4pGNxvPcfmRM_eMeCtNv27jeBD

June 20 2021	Outdoor Swap Meet	American Legion Hall Carol Stream, IL
August 2021	*RADIOFEST* CANCELLED	CANCELLED
October 2021	Outdoor - TBD	TBD American Legion Hall Carol Stream, IL
December 2021	Indoor - TBD Business Meeting	TBD American Legion Hall Carol Stream, IL

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WELCOME TO ARCI

Visit ARCI on the WEB

Website: www.antique-radios.org

FaceBook: https://www.facebook.com/ARCI.org

YouTube:https://www.youtube.com/channel/UCEyMw9QGrvcquC1vZBvHWbQ

Join ARCI

http://www.antique-radios.org/membershipinfo.html

-or-

Use the application in this newsletter

Leadership

President:	Tom Kleinschmidt
Vice President:	Jim Novak
Vice President:	Tom Zaczek
Treasurer:	Rudy Hecker
Secretary:	open
Radiofest chair:	Steve Muchow
ARCI News editor	Maureen Blevins

Contact ARCI

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PRESIDENT'S MESSAGE

Swap meets
We had our first Covid recovery swap meet since February 2020 in April at the American Legion Hall parking lot in Carol Stream, IL. It was a great success with good weather and a good turnout. Many of us had nice visits with fellow radio collectors face to face for the first time in well over year. We gained a few new members and many membership renewals. Thank you for your continued support and participation. Half of the radio donations in storage were brought out for the donation sale and auction yielding just over $1200. A huge thank you goes out to those members that helped with setup and cleanup. There are event pictures later in this edition.

Our June meet will be at the American Legion parking lot once again on Father's Day, June 20. Typically, we are guests of the Six Meter Club for their Father's Day hamfest. Their venue will not reopen until later this year and that event is canceled for 2021. We expect to get together once again with the Six Meter Club and the Midwest Classic Radio Net group in 2022 at the DuPage County Fair Grounds.

Due to Illinois Covid restrictions that were in place in April, *Radiofest* is once again canceled for 2021. April is when contracts and arrangements are locked in and therefore it is our go/no-go decision month. Steve Muchow has a *Radiofest* update in this issue. We are working on a traditional swap meet for August.

Spam email
I need to alert you to the ongoing scams that are targeting many of us. If you get an email solicitation for funds or asks you to "help them out of a jam", this is a sure sign that a scam is in progress. There have been many recent requests for monies "on behalf of" individuals and organizations. Please ignore these, as they are hackers who are targeting you. DO NOT REPLY to email requests for monies. If you have any inkling that this may be real, it is not.

My email address and the club email address have been targets of these scams. Several of you have contacted me by phone to confirm if these emails are scams. Yup they are! Be assured, I nor any officer, board member or volunteer will contact you to ask for money in this way.

ARCI on-line meets
Our on-line meets will have their first anniversary in July 2021. Kicked off in July 2020 they continue to be enjoyed by many enthusiasts around the country. This is a great way to learn history and the how-to of radio. It is an aspect of radio collecting that you don't get at a swap meet and historically only at *Radiofest* seminars. We have been blessed with smart people that share their knowledge from coast to coast. How else could you get a live tour of radio collections in places like

California, Wisconsin and Florida from the comfort of home? It is open to anyone with interest in old radio. With the advent of the Antique Radio Club of Illinois YouTube channel many more people are able to enjoy the on-line meet talks they could not participate in live, see them again or want specific content. Matt Pollak has done a fabulous job editing and indexing these videos. Check them out at: https://www.youtube.com/channel/UCEyMw9QGrvcquC1vZBvHWbQ

Details for the June 26th ARCI on-line meet are in this newsletter.

Tom Kleinschmidt
President,
Antique Radio Club of Illinois

ARCI UPDATE

A few photos from our **APRIL 2021 COVID RECOVERY SWAP MEET** which was held on April 25th at the American Legion Hall on S. Gary Ave in Carol Stream, IL. *Photos by Daniel Schoo*

There is a link to more photos on the club website. http://www.antique-radios.org/pictures.html


ALLIED
M 3311

JUNE SWAP MEET

20 June 2021 (Father's Day)

7AM – 11AM

AMERICAN LEGION HALL

570 South Gary Avenue

Carol Stream, IL 60188

- OUTDOOR swap meet
- DONATION SALE and AUCTION
- RESTROOMS and REGISTRATION - inside
- PARKING
  - Sellers in side lot
  - Buyers in front lot
- FEES
  - Must be an ARCI member to SELL
  - Standard Sellers Fee applies
- Hand sanitizer will be available upon entering and at various locations within the venue

COVID is still not over. New strains and hot spots are still occurring. Future meets will go through some scrutiny until COVID is behind us. Please bring a mask, as some people may still require them and please respect others desire for social distancing.

RADIOFEST 2021 PLANNING UPDATE

By Steve Muchow, *Radiofest* Chair

After much deliberation, ARCI made the decision to cancel *Radiofest 2021*. It was not an easy decision, but there were just too many unknowns around the Covid-19 restrictions to guarantee fulfilling up-front commitments to vendors and others into the month of August. The cancellation announcement was sent to members via e-mail in early May and posted on the ARCI website. We are now putting *Radiofest 2021* behind us and are focusing on next year … *Radiofest 2022!*

We are planning to again host *Radiofest 2022* at the Medinah Shriners Facility in Addison, Illinois with the adjacent Hilton Garden Inn providing overnight accommodations. For those that have not attended a recent ARCI *Radiofest*, the Medinah Shriners is located at the junction of I-355 and Army Trail Road in Addison, Illinois. This is a very convenient location that can be accessed from all directions within the entire Chicago area. We are working with the Hotel to provide a discounted room block–rate for attendees. It is still early, but the preliminary plan is to offer the same great activities that *Radiofest* is known for. This includes the world-class Friday Night Auction followed on Saturday by the large outdoor swap meet and donation auction. Additional Saturday activities typically include speaker programs, the popular ARCI outdoor ham station and an evening dinner/banquet. This format tends to offer something for everyone and has proven to be popular with *Radiofest* attendees. Again, this is preliminary and details will evolve over time.

Clearly, there are many elements involved in hosting a successful *Radiofest*. It is the enthusiasm and dedication of the many volunteers that continues to make this world-class event possible. Prior to canceling *Radiofest* in 2019 and 2020, several volunteers had already stepped forward and offered their help. Thank you to all of the volunteers that have helped over the years and we hope that you will, again, be willing to assist next year. Please let me know if you would consider being a part of the *Radiofest* Team. Contact me at smuchow@att.net with questions or comments.

Watch future issues of ARCI NEWS, the ARCI Website and E-mail blasts for future information on *Radiofest 2022*!

Radiofest 2022

Friday August 5 -- Saturday August 6
Medinah Shriners
550 N. Shriners Drive
Addison, IL 60101

ARCI ZONE
A Column on ARCI Special Items of Interest
By Tom Zaczek

ARCI Online Meet #12:
SATURDAY, June 26, 2021
10AM CT

10:00 AM CT – noon CT. (Zoom meeting opens 15 minutes before)

Click here to Register
or
https://zoom.us/meeting/register/JMucemspzkrGNYwPz2ulsGZ34FGQBhX0Iqj

After registering, you will receive a confirmation email containing the link required to join the meeting.

IMPORTANT- You need to receive the confirmation email back because this link gets you into the meeting when the time comes. So, if you don't receive the confirmation email it could be that it is in your spam folder.

Reminder: ARCI is now on YouTube. All the prior Online Meets (through April 2021) are available for viewing. You can find the channel here:

https://www.youtube.com/channel/UCEyMw9QGrvcquC1vZBvHWbQ

Check it out, subscribe, and stay tuned to the ARCI emails for more info!

AGENDA (may be revised without notice)

9:45 AM – OPTIONAL PRE-MEETING – Time to get logged-in and troubleshoot any access issues.

10:00 AM – Meeting Agenda

- Introduction – *Tom Zaczek*
- We're on YouTube – *Matt Pollack*

- PRESENTATIONS
    - The Mills Radio Corporation, Raleigh, NC circa 1924, and probably why you have never heard of them – Robert Lozier
    - History of Briggs and Stratton Part 2: Battery Eliminators - Dale Boyce
    - Tour of my Collection, Part 2 – Greg Van Beek
    - Part 6 of the Radio Preservation Series - Tom Kleinschmidt
- SHOW & TELL 1-to-3-minute informal presentation of something we can see … Join in and spend a few minutes to show your item!
- ARCI SWAP MEETS- An update on the upcoming swap meet and the one we just held
- ITEMS WANTED----ITEMS FOR SALE
    - If you want to offer something for sale OR see if others have what you're looking for, please let us know when you register and use this time to discuss it. Thanks!
    - Please show your items that have not been shown recently
- OPEN SESSION: Non-moderated chat session as time permits

12:00 PM – Close

Planned ARCI live on-line video meets for 2021 - Generally, the 3rd Saturday of each month 10AM CT--*(dates subject to change)*

Saturday, June 26	
Saturday, July 17th	Saturday, August 21st
Saturday, September 18th	Saturday, October 16th
Saturday, November 20th	Saturday, December 18th

Join in!
Bring something to "Show and Tell" after the formal presentations. It's very easy. Just join the meeting, and during the open session, show it on your camera or with a photo and talk about it for 1 to 3 minutes.

Be a presenter!
Share your project and passion with a 10-minute or longer presentation. Send an email to remote-events@antique-radios.org with your idea. Photos help too.

Become a member of ARCI!
These meets are open to everyone interested in antique radio. You do not need to be a member of ARCI. If you like these meets, your support of the organization is truly appreciated. Please consider joining. Please click this link for the membership form: Antique Radio Club of Illinois (antique-radios.org)
or http://www.antique-radios.org/membershipinfo.html

I look forward to the upcoming meetings and hope you all get a chance to attend. I encourage you to be a presenter to share your experiences, knowledge, and passions about these old radios!

The ARCI On-Line Meeting Team
Tom Kleinschmidt, Bill Cohn, Matt Pollack and myself are the ARCI On-Line Meeting Team and can be reached via email at remote-events@antiqueradios.org

RENEWALS

DO YOU KNOW WHEN YOU WILL EXPIRE?

Or, more specifically, your ARCI Membership? The address label shows your expiration month. It takes time to process renewal requests, so please renew at least one month BEFORE the month indicated on the label. This also helps ensure that you will continue receiving your *ARCI NEWS* without interruption.

Look on page 44 of this newsletter for the renewal form.

NEWS FROM THE HAMSHACK

By Jim Novak, WA9FIH

Remembering the BC-348

Back when I was a young ham in the 1960's, many of us stretched our budgets and enhanced our stations by using military surplus gear – I still have a very serviceable set of 1940's vintage headphones that were made by Western Electric and bought at a surplus store for $1.00! Ham radio magazines like *73* and *CQ* had monthly surplus columns with conversion articles and ads galore from surplus dealers. In Chicago, we had "surplus row" around the 2600 block of South Michigan Avenue plus several others scattered throughout the metropolitan area, and lots of surplus gear showed up at hamfests as well!

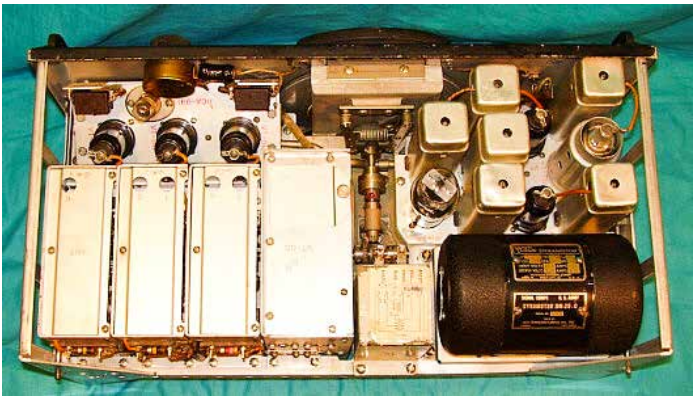
The radio had six bands; 200-500 kc for reception of location beacons, and five bands covering 1.5 through 18.5 Megacycles, AM and CW (Morse code), and was powered from the aircraft's 24 volt system, using a dynamotor (motor generator) to supply high voltage. The tubes' 6 volt filaments were wired series/parallel.

My BC-348, which probably had flown in a B-17, B-29 or similar aircraft, didn't

come from a surplus store, though - I had been a civilian member of Air Force MARS (Military Auxiliary Radio System), part of a group of volunteer ham operators who relayed messages similar to telegrams over the airwaves from our troops overseas to their families here in the States. We operated on frequencies adjacent to the ham bands, accepting "morale traffic", as it was called for locations within our local phone calling range, and often originated reply messages back to the overseas recipient. As a token of appreciation for our efforts, the military would have occasional "equipment issues" of electronic items deemed surplus to their needs - parts, test gear, and (usually obsolete or damaged) receivers and transmitters. Locally we would be invited to a site at the military (NE corner) of O'Hare Field several times a year, and could pick through piles of "stuff" which provided us with "winter projects!"

I had envisioned my radio serving as part of a two meter (144 Mc) AM/CW station, feeding an external converter into the 14 Mc range - back then there was little Single Sideband operation on VHF, mostly AM and a little CW. After cleaning years of dirt from the outside of the radio, I removed the dynamotor and constructed a 110 V AC power supply in that space, using a power transformer scrounged from a discarded TV. I Tested the tubes (all good!), sprayed contact cleaner over the switches and controls, and gingerly applied power – it worked(!) The front panel, however, reflected the hard use that this radio had, so I removed it, resprayed it and applied a set of "Teknical" decals, and even added an S (signal strength) meter. Although I've moved on to equip my VHF station with modern solid state gear, the good old BC-348 still occupies a space in my nostalgia collection.

BC-348



BC-348-R inside view

Music for the Millions: The Wurlitzer Story

by Gary Hoover

The Wurlitzer Company is one of the most interesting companies we have studied. At their peak, their slogan was "Music for the Millions." Here is the story of this formerly great company, based on the excellent book by Mark Palkovic.

Rudolph Wurlitzer and his sons Howard and Farny Wurlitzer

The Founder

Rudolph Wurlitzer was born in Schoneck, Saxony, Germany, in 1831, the first son of prosperous merchant Christian Wurlitzer. Christian had suffered a great disappointment when his father left his 2,000-acre farm to his elder half-brother rather than to Christian. While this was in line with German norms of primogeniture, Christian did not think it was fair. Christian revolted by, in turn, leaving his general store to his youngest son, not his oldest, Rudolph.

Rudolph realized he would spend the next fifteen years building up his father's general store in a valley full of over one hundred violin and woodwind makers. But all his efforts would be only as a paid employee, until his kid brother was old enough to take over. Not an inviting prospect. So Rudolph told his father he wanted to migrate to America, as many other Germans were. His father did not take him seriously, as Rudolph had no money of his own.

Rudolph's uncle, the brother of his late mother who had favored Rudolph, loaned him 305 marks (about $80 at the time) to cross the Atlantic, which the young man did in 1853 at the age of twenty-two.

Arriving in New York, the five-foot four-inch Rudolph vowed to save 25% of anything he earned. But the money came hard as he worked long hours at low pay for a Hoboken grocer. Dissatisfied, he moved on to Philadelphia. Approaching a well-dressed man to ask for a job, he was rebuffed as a beggar, and a foreigner. This insult led him to go further west to the booming city of Cincinnati, which had a large German population.

Rudolph's first job in Cincinnati was as a porter for a dry goods store at four dollars a week. To save money, he slept in a packing crate. He found a better job; eight dollars a week, at the merchant and banking house of Heidelbach and

Seasongood. The owners let him sleep in a loft at the office.

Young Rudolph learned English and picked up American ways faster than the other young employees and soon began a series of promotions, ultimately giving him the important position of Cashier (which is different in a bank compared with a retail store). Legend has it that Rudolph also traded in semi-precious stones and furs from the nearby countryside, selling them to dealers in Antwerp and Amsterdam. With the money he made, Rudolph paid back his uncle for the money lent him to come to America and sought a way to make a more permanent and prosperous living.

While he could not play any musical instruments, Rudolph loved music and knew some of the finest instruments were made in the cottage industries around his German hometown. His own ancestors were lute and violin makers as far back as the seventeenth century. They used the choicest woods from the forests of Bavaria, the Alps, and the Carpathians. By the 1830s, over three hundred people in the area, including women and children, were making instruments.

At the same time, Cincinnati, one of the largest cities west of the Alleghenies, continued to boom. In 1856, the Democratic National Convention was held there, the first such convention held outside the original thirteen states. (James Buchanan was nominated, over the incumbent President Franklin Pierce.)

In 1856, Rudolph went to a music store owned by a man named Johnson. He noticed that the store had few woodwinds. The clerk told him they were very hard to come by. Rudolph took his $700 in savings and sent it back to Germany, ordering a shipment of musical instruments. When the goods arrived in Cincinnati, he calculated customs and freight costs, then doubled the total to arrive at a fair selling price. He then approached Johnson with the fine instruments. Johnson liked the instruments but refused to buy them because he said they had to have been stolen in order to be offered at such a low price.

A stunned Rudolph Wurlitzer went back and "recalculated" his costs, pretending they were higher than they actually were. The proprietors of Heidelbach and Seasongood, where Rudolph still worked, vouched for his honesty to Mr. Johnson who then bought the instruments at the higher, "more honest," price and Rudolph netted $1500 on his $700 investment.

Rudolph later joked "From that time, my prices were *really* honest." After that first deal, he quickly sent $7,000 back to Germany for more instruments (over $200,000 in 2020 money). He kept his old job, but also rented warehouse space in downtown Cincinnati for his burgeoning importing business.

Wurlitzer was able to offer such good value because he eliminated the many middlemen in the way instruments were exported from Europe, imported into

America, and handled through distributors on both sides of the Atlantic. He realized he could sell as many instruments as he could get his hands on.

Wurlitzer Cincinnati Store and Headquarters

Rudolph was considered an amazing success back home, having prospered after only three or four years in the new country. He had also expanded the demand for all the instrument makers in the area.

In 1859, he became an American citizen. He tried to enlist for the Union in the Civil War but was rejected because of his short height. But he did get federal contracts to make trumpets and drums for the military. By that time, he had enough confidence to quit his old job and focus on the music business. His younger brothers began to join him in Cincinnati. In 1862, he added a retail store to his wholesale business, and in 1865 opened another store in Chicago, long before chain retail stores were common. But it would take one of his sons to develop a larger chain of stores.

In 1868, Rudolph Wurlitzer married Leonie Farny, whose family had emigrated from Alsace, France the same year that Rudolph came to America. Leonie was 25 and Rudolph was 37 when they married. Between 1869 and 1883, six children were born, though one was lost before he was a year old. Surviving sons, in order of birth, were Howard, Rudolph H., and Farny. As Rudolph's business prospered, the family moved to a larger home, replete with a laundress, upstairs maid, and a cook. All the children spoke English, French, and German.

Leonie's brother, Henry Farny, was a close family friend. He became a very successful artist, focused on the American West. Henry was also a friend of Teddy Roosevelt's and he brought many other artists and cultural personalities into the Wurlitzer family circle.

Throughout the rest of the nineteenth century, Rudolph expanded the business. Starting in 1870, he made buying trips back to Europe about every other year, often with his wife and, when old enough, his children. He began publishing beautiful catalogs of the instruments. By 1880, his line included hand-cranked reed organs from Paris and music boxes. In 1890, he incorporated the business with capital of $200,000, retaining most of the stock himself. By 1898, the catalogs reached 344 pages, including "pipe hand organs for street, saloon, and circus."

The Next Generation: Howard Wurlitzer

None of Rudolph's sons went to college. Each developed specific skills related to the music business. Howard, the oldest son, dropped out of high school at

Wurlitzer Catalogs

seventeen. By twenty, he was joining his parents on the European buying trips, which lasted months at a time. That same year, he was elected to the company's board of directors. By 1912, he was president of the company, at the age of forty. He would hold that job for the next fifteen years.

Howard was financially oriented and a very smart businessman, but he could be hard to deal with. He had no patience for inefficiency or carelessness. Some people liked him, but others hated him. When visiting Berlin, he noted how slowly everyone moved, how there was not "the rush and activity" of an American city. Howard was ambitious, desiring to grow the Wurlitzer company.

The second son, Rudolph H., became an expert on violins. Over time he amassed the world's largest collection of rare instruments, including over half of the Stradivarius violins known to exist. The company sold antique instruments under his leadership. Ultimately this became a separate company, run by his son and then his granddaughter, into the 1970s.

The third son, Farny, was twelve years younger than Howard and worked for him while Howard ran the company. Farny had a technical bent so his father sent him to technical school. Farny became the company expert in product development and manufacturing, complementing his older brother's strength in financial matters.

Their father, Rudolph, died in 1914. The company continued to expand under Howard. Stores were added in New York in 1908, Philadelphia in 1910, and by 1912 Cleveland, Dayton, Detroit, Providence, Newark, Columbus, St. Louis, and Louisville. By 1916, the first California store, in San Francisco, was opened. Wurlitzer acquired interests in other musical instrument makers and opened offices in Europe in the 1920s.

In 1896, Rudolph and Howard had convinced music box supplier Regina Music Box Company to add a coin slot to their music box. These were sold to restaurants and taverns and were a big success. The Wurlitzer company became Regina's largest customer. In the same era, the company sold both Victor and Edison talking machines (phonographs).

An important figure in the company's history in this era was Eugene DeKleist. The German had worked for a French maker of carousel organs for merry-go-rounds.

But the US tariff on these organs was high, and American carousel makers sought a more affordable domestic source. DeKleist moved to North Tonawanda, New York, outside Buffalo, to establish an organ factory there in 1893. He tried to sell some to Howard, but Howard was only interested in ones with a coin operation feature, as another product to sell to bars and other businesses.

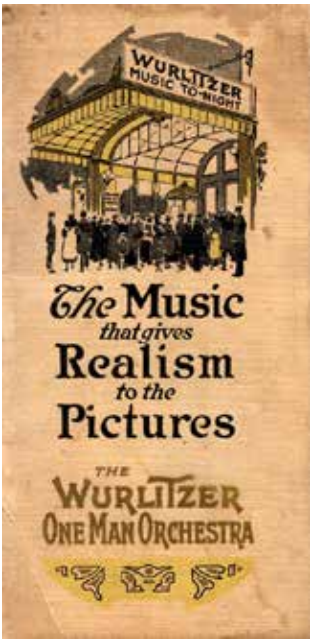
Regina Music Boxes

DeKleist then produced the coin-operated organs at North Tonawanda; they were a big success. The two companies continued to work together, in 1899 introducing the Tonophone coin-operated piano, in 1903 the PianOrchestra orchestrion with multiple instruments inside the box, and the Pianino in 1906. All of these products were immediate successes. These and automatic instruments called "photoplayers" were widely used by nickelodeons and later by movie theaters showing silent movies. In 1916, the company claimed that two million people a day heard its instruments. Wurlitzer even made coin operated harps!

Wurlitzer Pianino and Orchestrion

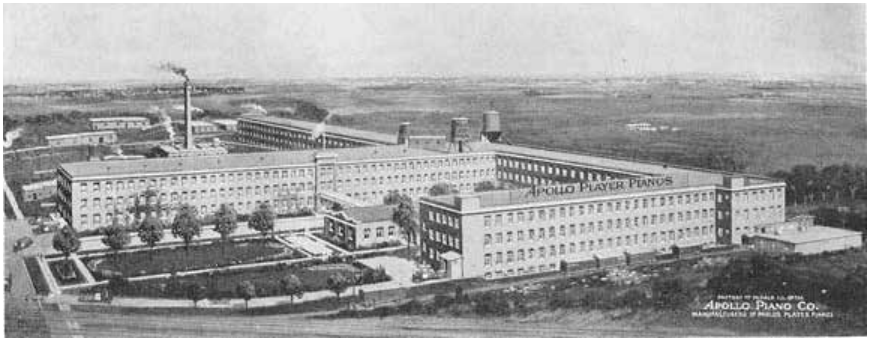
By 1908, DeKleist had become mayor of North Tonawanda and was losing interest in the manufacturing business. When the quality began to go downhill, Howard demanded that DeKleist sell out to Wurlitzer or he would start making his own instruments. The Wurlitzer company bought out DeKleist and dispatched Farny

to live in the Buffalo area and run that operation, which became the company's largest factory. At its peak in the 1920s, almost 3,000 people were employed there.



Wurlitzer's huge success with the instruments made for use with silent movies led to the natural development of the theater organ. They were developed with the patents and help of Robert Hope-Jones from Britain, who had begun replacing air power with electricity in organs. At first called the "Wurlitzer Hope-Jones Unit Orchestra" in 1910, these magnificent instruments soon were tagged "Mighty Wurlitzers." When production ended in 1943, Wurlitzer had produced over 2,200 such organs, more than twice as many as any other manufacturer. (If you have a Windows computer, you can put a Wurlitzer theater organ on your computer with this free software.)

At the same time, Wurlitzer continued making other instruments. In the 1920s, they bought the Melville Clark Piano Company of Dekalb, Illinois, to add more production capacity. Sold under the Wurlitzer name, pianos, including player pianos, became an important product. The company was one of the largest American producers, making a total of 2.8 million pianos.



Disaster Strikes

Prohibition had hurt their sales to bars in the 1920s, but the company continued to prosper. By 1927, they had 58 stores in California alone. Their coin operated instruments continued to sell and their theater organs had been a huge hit, with production peaking in 1926. But two factors hurt the company badly by the end of the twenties: the rise of radio, hurting sales of pianos, and the introduction of movies with sound in 1927. Demand for theater organs evaporated. The company went into the refrigerator, radio, and furniture businesses to try to offset the losses.

Howard, still running the company but suffering from ill health, saw no future in the business. Apparently the family had internal disagreements about that future. The company bought out Howard's interest for $4.2 million in 1927, depleting the company's cash resources, and Howard left the company. He died the next year.

As bad as things were, they got worse when the stock market crashed in 1929 and the Great Depression began. The Wurlitzer company was $4 million in debt and the bankers took a more active role in the company's affairs. They brought in the first outsider, RC Rolfing, in 1934. He and Farny Wurlitzer ran the company for the next thirty years, and in 1941, they moved the company's headquarters to Chicago.

Rebound

Farny and Rolfing focused the company's efforts on music, dropping the radios and refrigerators. With his knowledge of phonographs and coin-operated instruments, in 1933 Farny had bought the patents for an "automatic phonograph" and record changer from future Indiana Senator Homer Capehart. Wurlitzer developed the automatic phonograph concept, but at first resisted use of the more popular term "jukebox" (named after juke joints, which were considered low class).

In 1933, Wurlitzer sold 233 of the new devices. With the repeal of prohibition, bars were back and demand skyrocketed. In 1938, they sold 45,000 jukeboxes, which were soon half the company's business. The famous Model 1015, introduced in 1946, sold 56,000 in the first eighteen months on the market. Ultimately, the company manufactured and sold over five million jukeboxes.

A few Wurlitzer Jukeboxes Through the Years, Model 1015 center

In the late 1940s, Farny led the company to experiment with "electronic pianos" which were in fact not electronic, but were "electro-mechanical," still using hammers to hit metal bars. These pianos were smaller, lighter, and cheaper than regular pianos. The idea was to sell them to students and schools, hoping that the customers would later migrate to more expensive real pianos. These efforts led to the 1954 introduction of the Model 100 electronic piano, one of the first

commercially successful electric pianos. Soon enough, rock and rollers and blues artists developed a taste for their unique sound, and demand grew. Ray Charles and many others played "Wurlis." (Listen to one here.)

The Wurlitzer company was always committed to music education, usually offering lessons with the purchase of an instrument. With the new, cheaper electronic pianos, the company offered universities and schools a complete Music Laboratory. This set up allowed the teacher to listen to and talk to individual students, while the students wearing headphones could hear only their own instrument.

With these new products, Wurlitzer boomed in the 1950s and 1960s. After their struggles in the Depression, the number of stores had dropped as low as six in 1948, but by the 1970s the chain was back up to 49 stores.

The End

Despite this second burst of energy, the company spiraled downward. Japanese companies aggressively entered the American musical instrument business. Popularity of home pianos and organs went into decline. Farny Wurlitzer died in 1972 and RC Rolfing died two years later. Perhaps the will to live on had been sucked out of the company. But by 1985, a much smaller Wurlitzer was purchased by Cincinnati's competing piano maker Baldwin and was ultimately purchased by the Gibson Guitar Company. Today the last vestiges of the Wurlitzer name are on vending machines made in Germany by a former part of the company that was sold off years earlier.

Today, many of the products pictured are in high demand as collector's items. Even

smaller music boxes can go for well over $10,000, and some of the "automatic musical instruments" sell for four times that amount. We cannot help but compare this story to that of Brunswick, another midwestern firm built by German-American woodworkers, but a company that has figured out how to survive.

Originally Published Dec 5, 2020 by the American Business History Center at https://americanbusinesshistory.org/music-for-the-millions-the-wurlitzer-story/

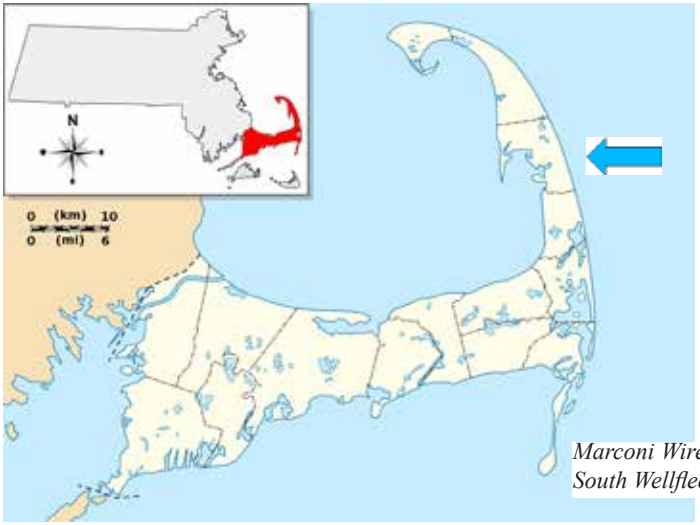
A Note On Homer Capehart and Philo T. Farnsworth

Senator Homer Capehart, referenced in this Wurlitzer article, is the same Capehart of Capehart radios and televisions. The Capehart brand was manufactured by Capehart Corporation (1927 - 1939), then Farnsworth Television and Radio of Fort Wayne, Indiana (circa 1939 - 1950) and then Capehart-Farnsworth (established circa 1950 - 1952). Philo Farnsworth is a key inventor of analog electronic television who went head-to-head with RCA.

Sources:
https://www.radiomuseum.org/dsp_hersteller_detail.cfm?company_id=2400
https://en.wikipedia.org/wiki/Philo_Farnsworth

ARCI ONLINE
Marconi's Cape Cod Site

Companion article to ARCI Live Online Meet of February 20, 2021
by Ed Taicsich



Marconi Wireless Station Site: South Wellfleet, Massachusetts

We took a family vacation to Cape Cod in the summer of 2012; the accompanying

photos are of (what was left of) the South Wellfleet, Massachusetts Marconi site. Born into the Italian Nobility as Guglielmo Giovanni Maria Marconi on 25 April 1874, he was the second son of Giuseppe Marconi and his Irish wife, Annie Jameson (the granddaughter of John Jameson, founder of Jameson and Sons Whiskey distillers!!).

Marconi suffered 9 heart attacks in his last 3 years of life, while helping to develop microwave technology: he died on July 20, 1937, after his 9th heart attack.

Marconi was an Italian inventor and electrical engineer known for his pioneering work on long-distance radio transmission and his development of Marconi's Law and a radio telegraph system. He is credited as the inventor of radio and he shared the 1909 Nobel prize for Physics with Karl Braun "in recognition of their contributions to the development of wireless telegraphy".

In 1924, along with private entrepreneurs, the Marconi company formed Unione Radiofonica Italiana (URI); that same year, the Mussolini regime granted URI a monopoly of radio broadcasts. After the war, URI became RAI-Radiotelevisione Italiana; commercially styled as RAI since 2000; known until 1954 as Radio Audizioni Italiane. This is now the national public broadcasting company in Italy, owned by the Ministry of Economy and Finance.

Marconi was ennobled by King Victor Emmanuel III of Italy in 1929 as the 1st Marquis of Marconi. 1n 1931, he set up Vatican Radio for Pope Pius XI.

Marconi did not attend school as a child and did not go on to formal higher education. He learned chemistry, math, and physics from tutors. A tutor taught 17-year-old Marconi the basics of physical phenomenal as well as new theories on electricity. Heinrich Hertz demonstrated that one could detect electromagnetic radiation in 1888. In the early 1890s, Marconi began working on the idea of wireless telegraphy.

There was a great deal of interest in radio waves in the physics community, but this interest was in the scientific phenomenon, not in its potential as a communications method. Hertz's death in 1894 brought published reviews of his earlier discoveries, including a demonstration on the transmission and detection of radio waves by a British physicist and an article about Hertz's work. The article renewed Marconi's interest in developing a wireless telegraphy system based on radio waves.

Marconi developed the first practical transmitters between 1895 and 1901. These first transmitters did not transmit audio like current radio stations, but transmitted information by radiotelegraphy: Morse code.

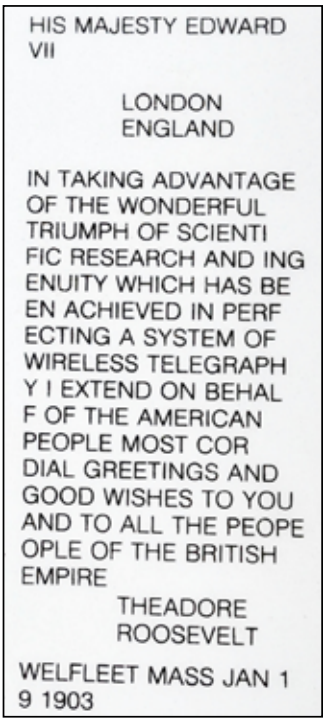
In the summer of 1895, Marconi moved his experiments outdoors on his father's estate in Bologna. He tried different arrangements and shapes of antenna but even

with improvements he was only able to transmit signals up to one half mile. A breakthrough came later that summer when Marconi found that much greater range could be achieved after he raised the height of his antenna and grounded his transmitter and receiver. With these improvements, the system was capable of transmitting signals up to 2 miles, and over hills. His monopole antenna reduced the frequency of the waves compared to the dipole antennas use by Hertz, and radiated radio waves that traveled longer distances. Marconi's experimental apparatus proved to be the first engineering-complete, commercially successful radio transmission system.

Marconi's "Wireless Telegraph and Signal Company" was formed on July 20, 1897 after it was granted a British patent for wireless that year, and dominated the early radio industry. The company opened the world's first radio factory on Chelmsford, England in 1898 and was responsible for some of the most important advances in radio and television, including the diode vacuum tube in 1904, trans-Atlantic radio broadcasting, high frequency tuned broadcasting, and formation of the British Broadcasting Company (BBC).

Stations were established in Australia, 4 in Canada, 3 in Ireland, France, India, Italy, Newfoundland, Spain, South Africa, 5 in the UK, and in 6 different states in the US.

Marconi had 2 types of stations: Coastal stations, which communicated with wireless stations on ships, providing weather and navigation information. These stations transmitted at lower power, on what is now AM band frequencies: 600, 660, and 1000 kHz. Transoceanic stations, for intercontinental communications, were large high-powered stations with large antenna arrays, with output power of 100 kw to 1 megawatt. To achieve daylight communications at such long ranges, they used frequencies in the VLF band, from 50 to as low as 15-20 kHz. Morse code was transmitted at 100-200 words per minute using automated paper tapes.


HIS MAJESTY EDWARD VII

LONDON
ENGLAND

IN TAKING ADVANTAGE OF THE WONDERFUL TRIUMPH OF SCIENTI FIC RESEARCH AND ING ENUITY WHICH HAS BE EN ACHIEVED IN PERF ECTING A SYSTEM OF WIRELESS TELEGRAPH Y I EXTEND ON BEHAL F OF THE AMERICAN PEOPLE MOST COR DIAL GREETINGS AND GOOD WISHES TO YOU AND TO ALL THE PEOPE OPLE OF THE BRITISH EMPIRE

THEADORE ROOSEVELT

WELFLEET MASS JAN 1 9 1903

A Marconi station built in 1902 in South Wellfleet, Cape Cod, MA transmitted its first telegraphic message via spark gap transmitter in 1903 from what is now known as the National Park Service "Marconi Area" - about a mile north of the entrance to Marconi Beach. This first message, a greeting from President Roosevelt to British King Edward the VII, on January 18, 1903, is displayed in this picture. Marine radio

traffic carried before the station closed in 1917 included news and telegrams for passengers of the RMS Lusitania and distress calls from the RMS Titanic in 1912. This role of wireless in maritime rescue raised public awareness of the value of radio and brought fame to Marconi, particularly the sinking of the Titanic on April 15, 1912, and the RMS Lusitania on May 7, 1915.

On June 18, 1912, Marconi gave evidence to the Court of Inquiry into the loss of the Titanic regarding the marine telegraphy's functions and the procedures for emergencies at sea. Britain's postmaster-general summed up, referring to the Titanic disaster: "Those who have been saved, have been saved by one man, Mr. Marconi…and his marvelous invention". Marconi was offered free passage on the Titanic before she sank but had taken the Lusitania 3 days earlier: Marconi's daughter later explained he had paperwork to do and preferred the public stenographer on the Lusitania.

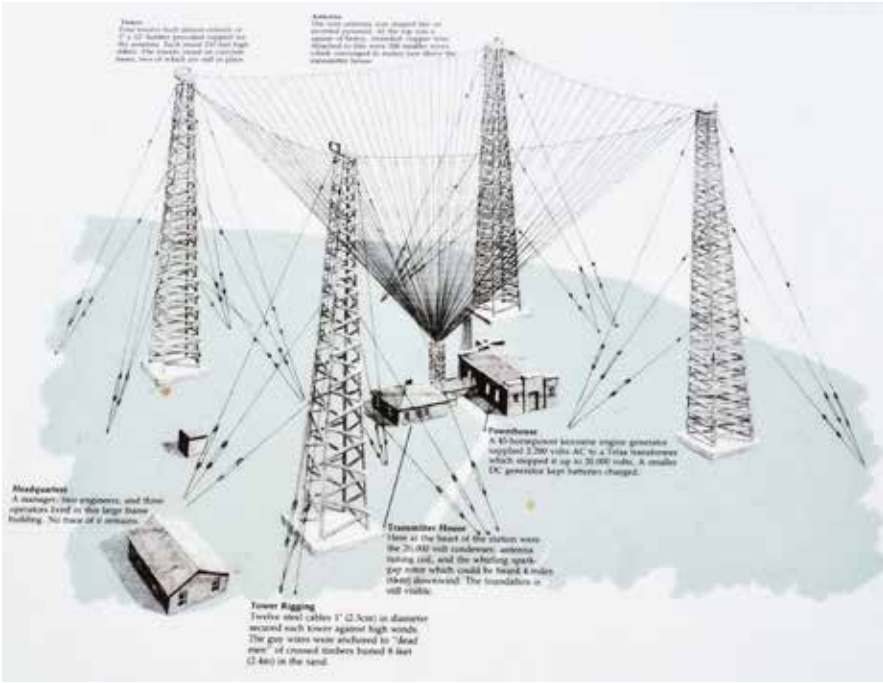
He began to build high powered stations on both sides of the Atlantic to communicate with ships at sea, in competition with other inventors. In 1904, he established a commercial service to transmit nightly news summaries to subscribing ships, which could incorporate them into their on-board newspapers. A regular transatlantic radio-telegraph service was finally begun on October 17, 1907 but even after this the company struggled for many years to provide reliable communications to others.

The antenna array was oriented in a square: Marconi erected a large antenna array on 4 towers built out of 3 x 12-inch wood, 210 feet high, on concrete bases. Twelve 1 inch guide wires stabilized each tower, being anchored by crossed wood timbers buried 8 feet in the sand. The transmitting station was powered by a 45 hp kerosine engine generator that produced 2,200 volts AC to a Tesla transformer which stepped it up to the 20,000 volts, needed to send the signal to a similar station in the UK. The transmitter house had a 20,000-volt condenser, antenna tuning coil, and whirling spark gap rotor, which could be heard 4 miles downwind.

The wire antenna array was shaped like an inverted pyramid; at the top was a square of heavy, stranded copper wire. Attached to this were 200 smaller wires which converged in midair just above the transmitter house.

One of the stations most notable roles occurred with the sinking of the Titanic: operators at the station were able to alert the RMS Carpathia so that they could rescue the Titanic's passengers.

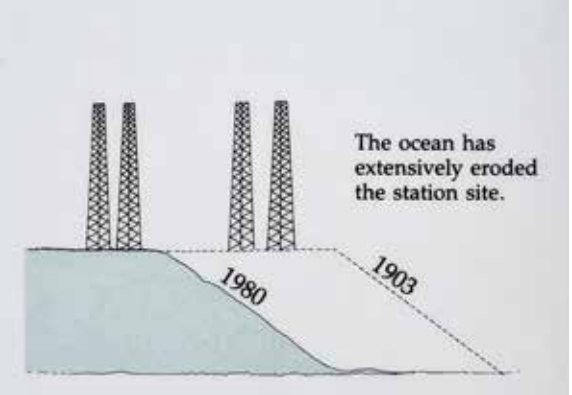
Marconi realized a more permanent presence would require a more inland and somewhat sheltered location. He built his new trans-oceanic receiver station in Chatham by 1912, and its companion high power trans-oceanic transmitter station forty miles west in Marion, MA. The Titanic and the Carpathia communications were done from there; there is debate as to whether the South Wellfleet Station was ever put into commercial operation.



A sketch of what the original site looked like. Over 100 years later; there is very little evidence of this site still visible: beach erosion has taken its toll. As of 2021, there is nothing of the original site still visible.

The South Wellfleet station was closed in 1917, in part over concerns about security in World War I, but also because its towers were threatened by erosion. The US Navy dismantled the South Wellfleet antennas and equipment in 1919 and 1920; usable materials and equipment were removed and the site was abandoned. Also in 1920, the Marconi Wireless Telegraph Company of America sold the Chatham and Marion sites to the Radio Corporation of America. RCA removed all remaining Marconi equipment from the Chatham receiver station and converted it to a public coastal station for communications with ships at sea. In 1921 Chatham was licensed under callsign WCC for communications on 500 kHz, 750 kHz and 1 mHz. In 1922 RCA moved the WCC radio transmitters to the Marion transmitter station to eliminate co-site interference to the sensitive receivers at Chatham. In 1929 WCC Marion began operations on maritime HF frequencies 6, 8, 12, 16, and 22 mHz.

The Chatham receiving station is now the Chatham Marconi Receiving Station, and the home of amateur radio station WA1WCC, licensed to the Amateur Radio Association. The South Chatham transmitter station is now preserved in its entirety at the forest Beach Conservation area by the town of Chatham. In a long string of buyouts and reorganizations, Marconi still survives today as part of the Swedish telecommunications company Ericcson.



The eastern antenna (towards the ocean) mast sites have been lost due to beach erosion; These pictures are of the western (inland) remains of the antenna masts and building foundations. Per Wikipedia, no trace of the site remains as of September 2014; erosion into the sea has claimed all the original site.

The interpretive display pavilion contains plaques and information on Marconi, the text from President Roosevelt to King Edward VII, and the chronology of the site.

The remains of some of the inland crossed timber anchors.

CHRONOLOGY
Marconi's South Wellfleet Wireless Station

1901 - Marconi selects site and begins construction of the station.

1901 - In November a severe storm wrecks the station.

1902 - Station rebuilt with antenna supported by four heavy wooden towers.

1903 - First transatlantic wireless messages sent between the United States and England.

1906 - Marconi's engineers warn that cliff erosion is endangering the station.

1912 - Station operator hears a distress call from the sinking luxury liner *Titanic*.

1917 - After 15 years of commercial service, the U. S. Government closes the station for wartime security reasons.

1920 - Equipment salvaged, towers dismantled, and buildings abandoned to the sea.

1961 - Site acquired by National Park Service as part of Cape Cod National Seashore.


The Boston Daily Globe.
EVENING EDITION—7:30 O'CLOCK
ALL DROWNED BUT 868
About 1232 Lost Lives in the Titanic's Plunge, Greatest Sea Disaster for Years.
EXCITING EVENTS BEFORE TITANIC'S FINAL PLUNGE
Virginian and Parisian Found Home Alive.
Women and Children Safe But Few Rescue Men.


ONLY 710 ARE SAVED, SAYS WIRELESS

Items from a Titanic/Marconi display at Radiofest in 2012

RADIO ZONE

Restoring an Emor Globe 100: the Fabergé Egg of Radios

by Gary Albach

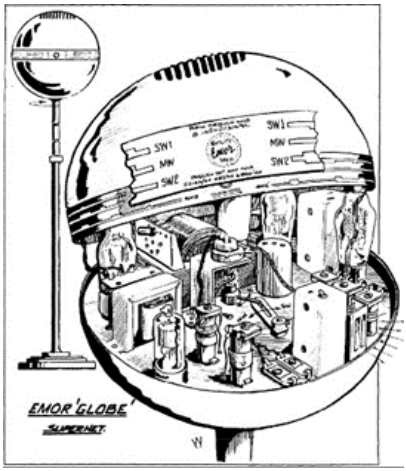
The Emor Globe 100 is without a doubt one of the oddest radio designs ever produced, loved by some, hated by others and unknown to most collectors. Friends seeing the radio for the first time have blurted out remarks such as "It looks like a mini Weber barbecue / R2D2's brother / a cross between a radio and a vacuum cleaner", and "I'm glad it's in your house and not ours".

It is certainly a unique design, best described as 'quirky'. On the outside, it is a metallic ball perched atop a chrome pole. Inside, it has the feel of a hand-crafted prototype rather than the uniformity of North American mass production. You can almost hear the designer muttering: 'Oops. I guess we'll only put in three screws as the fourth hole is now covered by the transformer.' True – only one of many delightful peculiarities.

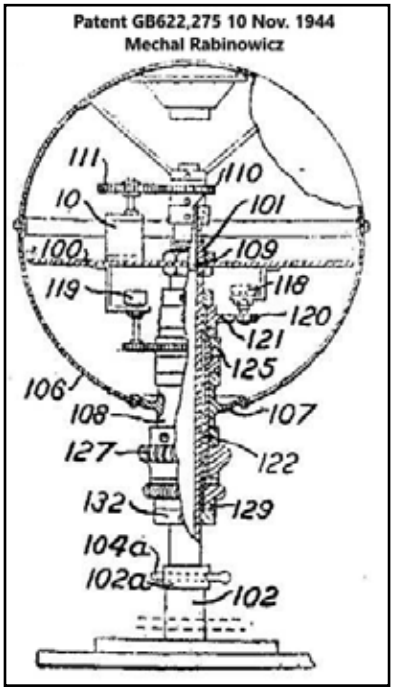
Background

While the Emor Globe has been the subject of articles in hobbyist newsletters and television programs over the past 24 years[1-5], much of the information is secondary in

nature. There is little primary information in the published work. In compiling this article, I have tried as much as possible to reference primary sources of data, such as national patent offices and owners of these radios with firsthand knowledge of their appearance and construction.



A patent for this peculiar radio was applied for in the UK in 1944 by Mechal Rabinowicz, a Polish engineer and inventor reported living in London[1], with the UK patent being granted in 1949[6], a US patent in 1950[7] and a Canadian patent in 1952[8].



Mr. Rabinowicz looks like he was an interesting fellow. Born about 1910 in Poland[9], he patented an improved children's bath in 1945[10] and cited both a cake-mixer patent from 1905[11] and a watch-cleaning patent from 1923[12] as part of his radio patent application.

As outlined in the patents for the radio, the purpose of the design was '... to avoid the necessity of providing actuating knobs on the casing for the subsidiary control members, such as a wave-change switch or a volume control device ...'[7]. Hence, a radio with no knobs.

Emor Radio Ltd. in the UK appears to have had this radio as its only product as no other Emor products can be found. Variants of the radio were produced and sold by Emor as Model 200 during the late 1940s in London at 45 Kilburn High Rd[13]. An announcement in the February 1947 edition of the British publication 'Practical Wireless'[14] showing an 'Export-only' model states that 'The receiver should be available in this country later, and the price will be 14 guineas.' (Had to look up what a guinea was – it has an interesting history.)

An export version, designated Model 100, was also assembled in the late 1940s for the Canadian market by the Faust Radio Company at 486 Rue St. Jean in Montreal[13].

US-made components in this Canadian model suggest that the chassis was made in the US and imported for assembly by Faust. Emor maintained an office in New York at 400 East 118th Street[13] but to date there is no documentation to verify which model was sold from that location or if any assembly work was done anywhere in the US.

There are considerable differences between the UK Model 200 and the Canadian Model 100. Differences in the dial and its assembly make the UK model appear more spherical than the Canadian model, which has a more egg-shaped appearance.

UK collectors claim that the UK models exist in bright chrome, gold, and pink[15]. Photos of pale green and blue versions exist on the internet but without attribution. Examples of original Canadian models exist in red and bright chrome, and multiple credible photos of blue models have been found[16]. A photo of a green Canadian version exists on the web but without attribution. The UK models predominantly had flat, circular, painted metal bases while the Canadian models have domed circular chrome bases to match the chrome pole supporting the globe.

The radio described here was purchased in New Jersey in 2020. It may have been assembled by the Faust Radio Company in Montreal between 1948 and 1950 under license to Emor in the UK. From the variety of pictures posted on the web, and from the construction practices in my set, it seems that each set was built like a prototype, with changes made as the design evolved. The UK version was featured on the BBC 'Antiques Roadshow' in 2003[4] where the interviewee speculates that there were probably only about a hundred of these radios made in the UK., but I can find no collaborating evidence to support this number.

Also, I can find no evidence of how many of the Canadian models were made. To date (March 2021) I have found six in Canada.

The Models

It appears that there are four distinct models worldwide, with production variations within these models[16] . There are two UK models, Model 200 for export and Model 100 for domestic sale; one Canadian version, Model 100, made in Montreal; and one US version, again Model 100, currently of unknown origin and possibly sold from an office in New York city. These models are presented in the accompanying table with data from March 2021.

If you have additional information to add to this table, or if you see errors, please contact the author through the editor of this publication who has agreed to publish an Addendum of changes if they warrant further attention.

	UK		Canada	US
Model	**100**	**200**	**100**	**100***
Manufacturer/ Sales Agent	Emor Radio, London	Emor Radio, London	Faust Limited, Montreal	Emor Radio, New York
Market	Export ('Indian Model')	Domestic	Canada	US
Patent	GB622360 (April 1949)	GB622360 (April 1949)	482441 (April 1952)	2,514,670 (July 1950)
Colours	Aluminum, chrome	Chrome, gold, blue, pink	Red, chrome, blue	Aluminum
Size	11.5in diameter globe	11.5in diameter globe	12in diameter. globe x 13in high	12in diameter sphere.
Line voltage	200/240VAC (110VAC not confirmed)	200/240VAC	117VAC	117VAC
Tuning dial	2in wide x 3/8in thick plastic sheet secured top and bottom with clips.	2in wide x 3/8in thick plastic sheet secured top and bottom with clips.	2-1/4in wide x 1/16in thick plastic sheet secured along bottom with screws and along top with clips and screws. Two red lines, one for Broadcast, one for Shortwave.	2-1/4in wide x 1/16in thick plastic sheet secured along bottom with screws. Nine vertical plates behind dial secure top hemisphere with screws. One blue line for BC, one red line for Shortwave.
Speaker	Attached to top of globe	Attached to top of globe or to chassis on 2 pillars	Attached to chassis on 3 pillars	Attached to chassis on 3 pillars
Speaker grill	Cut into top section of globe	Cut into top section of globe	Separate cast metal grill, chrome plated, attached to top of globe	Separate cast aluminum metal grill, polished attached to top of globe
Base	Flat disk, painted	Flat disk, painted	Rounded disk, chrome plated	Resembles a floor lamp base. Weighted with concrete-like disk.
Supporting column	Extendable. Chrome plated	Extendable or short for table model. Chrome plated	Extendable. Chrome plated	Chrome plated
Control barrels	Chrome plated.	Knurled, chrome plated	Smooth, chrome plated	Smooth, chrome plated
Chassis	Round plate	Round plate	Square plate with corners cut	Square plate with corners cut
Tubes	6K8, 6K7, 6Q7, 6V6, 5Z4	6K8, 6K7, 6Q7, 6V6, 5Z4	6SA7, 6SK7, 6SQ7, 6V6, 5Y3	6SA7, 6SK7, 6SQ7, 6V6, 5Y3

Components	Open power transformer with side bracket for voltage selection. Output transformer on chassis	Enclosed power transformer with voltage selection on top. Output transformer on chassis or on speaker if mounted on pillars.	Single voltage enclosed power transformer. Output transformer on speaker. Components made in US	Single voltage enclosed power transformer. Output transformer on speaker. Components made in US
Tuning Frequencies	MW (Broadcast): 545kHz – 1500kHz SW1: ? MHz SW2: ? MHz	SW: 52m – 13.5m (5.8MHz – 22MHz) MW: 550m – 200m (545kHz – 1500kHz) LW: 2100m – 800m (143kHz – 375kHz)	MW (Broadcast): 535kHz – 1605kHz SW: 4.7 – 20MHz	MW (Broadcast): 550kHz – 1700kHz SW: 4.7 – 20MHz (Riders 16-2) but dial marking on set indicates start at 6.0 MHz
Intermediate Frequency (IF)	465kHz	465kHz	456kHz	456kHz
* Labelled '100' following entry in Riders Trouble Shooter's Manual, Vol. 16 (1946/47)				

The chassis of the UK and Canadian models is shown below. The chassis of the US Model is the same as the Canadian model.

The dials of the various models are shown to the right. Top left: UK Model 100, Top right: US Model 100, Bottom left: UK Model 200, Bottom right: Canadian Model 100

The Circuits

The radio in my set is a standard 5-tube superhet design (6SA7, 6SK7, 6SQ7, 6V6, 5Y3) with a power transformer for AC-only operation. It covers the AM broadcast band (535 - 1605kHz) and one shortwave band (4.7 – 20 MHz) with an IF of 456 kHz. The UK models have three bands: SW,

tuning 52m – 13.5m (5.8MHz – 22MHz); MW, tuning 550m – 200m (545kHz – 1500kHz); and LW, tuning 2100m – 800m (143kHz – 375kHz). The only known instance of the US Model 100 has the same tube lineup as the Canadian model and similar wave bands.

Cabinet Restoration

While the radio does not have a 'cabinet' in the traditional sense, the enclosure consists of a 30 cm (12 in) diameter anodized aluminum globe mounted on a telescoping chrome-plated steel post and sturdy chromed steel base. This aluminum globe is made in two sections, an upper and a lower, each being removable to allow access to the radio chassis which is securely bolted to the top of the chrome post.

A fragile translucent plastic dial forms a band around the equator of the globe and secures the two halves together. The radio is tuned by rotating the entire globe and dial assembly, with stations being indicated by a vertical band of light shining through the dial from the inside. The speaker is mounted to the internal chassis and points upward through a metal grill on the top of the upper dome. (The export UK Model 200 has the speaker mounted to the inside of the rotating dome). Overall, the radio stands between 1.1 m (3.5 ft) and 1.4 m (4.5 ft) high and weighs about 10 kg (22 pounds).

The controls for tuning, on/off volume, and band selection are very unusual. They consist of rings near the top of the vertical chrome post which can be individually gripped and rotated. The rings are connected to a group of coaxial shafts inside the post, leading up to the controls on the chassis of the radio inside the globe. Turning the top ring rotates the entire globe to tune in a station, turning the ring below actuates the band switch, and the bottom ring rotates the volume potentiometer and on/off switch.

As received, the radio was generally in poor condition. There were dents in the aluminum globe, sections of the plastic dial were missing, all the steel nuts and bolts were rusted, and all the chrome plating had blistered and was flaking off. The dents in the globe were tapped out by a local automotive panel beater. All the chromed parts were refurbished by Victoria Plating Ltd. (http://www.victoriaplating.ca), a Canadian plating shop that does excellent precision work.

The Dial

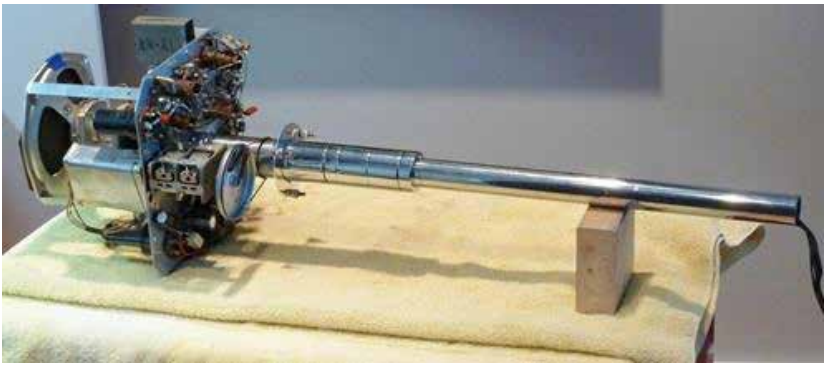
Replacing the plastic dial proved to be more of a problem than I had anticipated.

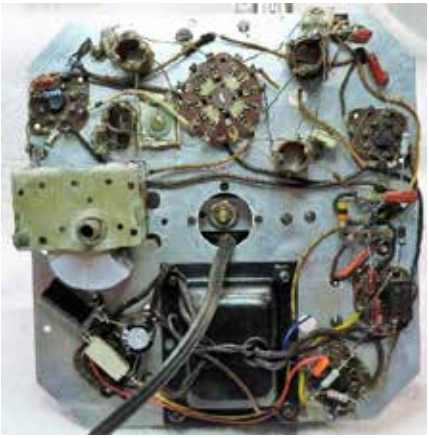
The dial is a structural component of the radio, bolted between the top and bottom halves of the globe and supporting the top half. This is not a good mechanical design because the plastic is easily damaged and difficult to replace. In my radio it was badly cracked, and a section was missing. Radio Daze LLC (https://www.radiodaze.com), a supplier in Rochester, NY, was able to accurately reproduce a new dial from photographs of the old dial and a section that I sent to them. The top half of the globe is secured to the dial with eight (8) captive U-nuts, which are commonly available in sizes #8 and larger for automotive applications, but these are #4 and half were missing. I managed to buy a package from a supplier in England (https://stagemotorsport.co.uk) at a reasonable price with prompt delivery by 'Royal Mail'.

Chassis Restoration

The chassis consists of an aluminum plate located horizontally inside the red globe approximately at the equator and bolted securely to the central pole. The top and bottom halves of the globe come loose to be lifted off or slid down to gain access to the speaker, tubes and IF transformers on the top of the plate and the smaller components underneath. As with the damaged external chrome parts, all the internal steel parts were rusted. The radio was disassembled, all the rusted parts were cleaned with naval jelly and lubricated with light machine oil. The aluminum chassis plate, structural brackets and original filter capacitor were cleaned and painted with Krylon chrome spray, to give an aluminum-looking finish. I've found that the Krylon chrome looks more like aluminum than the aluminum sprays do.

All the wax paper and electrolytic capacitors were replaced, along with a few out-of-tolerance resistors. The original electrolytic can and wiring were left in place to preserve the look of the top of the chassis, and the wires disconnected and terminated from below. In the Canadian model the speaker is fastened to the static chassis by three (3) posts holding it just below the top grill, which is attached to the top of the dome and rotates with the globe.





When first powered up, the radio emitted a loud hum, independent of the volume control; this hum was traced back to a poor ground connection and fixed by a minor re-wiring to a more reliable ground point. This was another example of the electrical design taking a back seat to the ingenious mechanical tricks.

The dial cord (yellow arrow in picture on next page) connects the rotating globe to the stationary tuning capacitor which is fixed to the chassis. Tuning is done by rotating the entire globe, either by simply holding it and turning, or by rotating the chrome ring affixed to its bottom section. A bolt protrudes from the rotating

tuning shaft just under the bottom of the fixed chassis plate (red arrow), and I expected that its purpose was to provide a stop at each end of the tuning range. However, I could find no evidence of stops on the chassis plate to limit the rotation of the bolt and so in this radio the globe and dial strip rotate continuously 360 degrees.

Alignment and Use

Alignment of the IF circuits and the local oscillator followed the standard procedure of most 4-tube plus rectifier superhet designs. With a short external antenna trailing out from the base, the radio performs about the same as any other budget AA5 of the same era. Sound fidelity is poor due to the speaker being loosely enclosed by a metal ball. One reviewer in the UK admitted that 'The worst sounding radio I have is the Emor Globe, like a bee in a tin.' Canadian owners have a uniquely Canadian opinion: 'like a speaker in a beer can.'

Conclusion

Fabergé eggs have been described as objects of fascination, mystery, and intricate artwork. Since the first Faberge egg was created in 1885 for the Russian Empress, exactly how many of these fragile art pieces were created has been difficult to determine. And the easily breakable mechanism which opens the egg into two halves has endangered the survival of these enameled works of art. Our lookalike Emor Globes follow in a fine tradition.

Acknowledgments

Owners of these unique radios across North America generously donated their knowledge to my search for information. In particular I would like to thank Joe Lima in Victoria who first introduced me to these radios and provided help in understanding their operation, to Jean Marcotte and Daniel Labelle in Quebec who provided details on their sets and helped with the research, and to Tom Kleinschmidt in Illinois who has tirelessly helped us try and understand the US history of these radios.

Appendix: Reassembly Details

The chrome pole assembly contains various collars that are secured with grub screws. These screws were removed from the collars prior to re-plating. Before they could be reinstalled, the threads in the collars were chased with appropriate taps to remove the excess chrome that had deposited in the threads.

The following are the steps that I followed to reassemble the mechanical components.

1. Ensure that the line cord and antenna wire are installed in the radio.
2. Attach the bottom half of the pole to the floor base. In my set the pole is clamped in a collar by two grub screws, and the collar in turn is bolted to the base. Other sets have the pole welded to the collar and the collar bolted to the base.
3. Position the radio on the workbench with the chassis plate vertical and the transformer initially at the bottom. Because the plate is square the radio can be rotated to sit on each of its sides, allowing access to various nuts and bolts.
4. Remove the speaker and set aside.

Figure A1(above) and A2 (below)

5. Secure the slotted arm to the shaft of the band switch with a nut and bolt. (Figure A1)
6. Maneuver the flat internal band switch control arm up through the large central hole in the chassis. Slide the volume control extension shaft up through the hole in the top of the band switch control bracket and loosely attach the two-screw coupling to the top of the volume control shaft (Figure A2).
7. Engage the internal band switch control arm with the slotted arm on the band switch (Figure A1)
8. Remove the two bolts securing the Z-shaped bracket holding the volume control and gently swing the bracket and the control aside, to gain access to one of the four holes in the chassis plate surrounding the large central hole in the chassis.
9. Thread the line cord and antenna wire down through the large central hole in the chassis plate, and then down through the upper chrome pole. At this point it is convenient to have a short 2” x 4” wood block to support one end of the upper chrome pole horizontally on the workbench (Figure A3).
10. Slide the upper chrome pole over the band switch control bracket and volume control extension shaft. The bottom of the band switch control bracket and the bottom of the volume control extension shaft will now be visible in the cutout

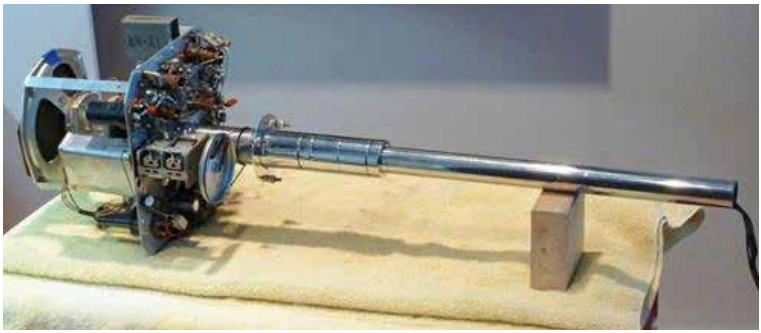


Figure A3

in the upper chrome pole. Orient the pole so that the threaded nut on the bottom of the band switch control bracket is visible through the cutout section and attach the pole to the bottom of the chassis plate with three nuts and bolts. The plate and the collar on the top of the pole have four mating mounting holes, but only three are used because the fourth is inaccessible under the power transformer!

11. Replace the volume control bracket with two nuts and bolts.
12. Position the top of the volume control extension rod in the coupling but don't tighten the set screws yet.

Figure A4

13. Before securing the barrels and collars, lubricate the top and bottom of the internal rotating assemblies with white lithium grease.
14. Once all three control barrels and two securing collars are secured in place, tighten the two screws on the volume control coupling (Figure A1). Ensure that when the volume control barrel is rotated to its extreme counterclockwise position (looking up from the bottom) the On/Off switch on the volume control is Off. Ensure that the set screws on the coupling do not interfere with the rotation of the lever arm bolted to the shaft of the band switch.

15. Install the dial cord (Figure A5 right)

16. Install the speaker. Note that only three of the speaker mounting holes are used.
17. Sit the radio upside-down on the speaker with the upper chrome pole facing up. Slide the lower section of the aluminum globe over the pole and secure to the bolts on the tuning barrel with three lock nuts.
18. Turn the whole radio assembly over and slide the upper chrome pole into the lower chrome pole and secure with the wingnut at the top of the lower chrome pole. Ensure that the line cord and antenna wire are not binding inside the pole assembly.
19. Attach the plug to the end of the line cord.

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RADIO ZONE

An Occasional Column on Radio Related Items of Interest

The Edison Effect

by David Kruh

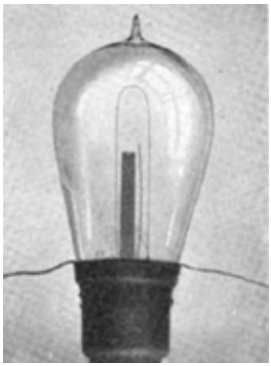
The year is 1880 and Thomas Edison was several years into his quest to perfect an incandescent light bulb. It was important to him the bulb produce a light which was both bright and safe, qualities not found in lighting solutions of the day. It was equally critical the price be low enough for the average citizen to afford, yet high enough to cover the cost of building an electric distribution system from scratch.

Edison learned hard lessons about earning a living as an inventor early. As I explained in a previous blog, one of Edison's first patented inventions, an automatic vote counter, didn't sell. He then watched helplessly as the stock ticker which he, out of no small amount of financial desperation, had sold the rights for $40,000, went on to earn its' new owner millions. After these and other lessons he was alleged to have vowed never to invent anything he wasn't sure he could sell.

Edison used the sale of the stock ticker to build a fully stocked laboratory in Menlo Park, New Jersey and hire mechanics, craftsmen and engineers with inquisitive minds to build devices that would change the world. But on this night, Thomas Edison was puzzled. Based on every known law of physics what he was seeing inside his incandescent light bulb was impossible.

A few days earlier he saw, with much frustration, that after a few hours the carbonized (pre-burnt) bamboo filament inside his bulb was leaving an unsightly carbon deposit inside the bulb. He also noted that the filament wasn't burning evenly - it was darker at the end closest to the positive terminal of the battery powering the bulb. He wrote the observation in his notebook, and then quickly moved on - it was more important than was eliminating those ugly carbon deposits. He tried several things before adding a metal plate inside the filament which, in a later photograph taken of a similar bulb, looks like a paperclip.

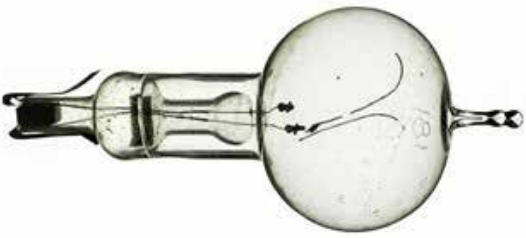
The metal plate didn't help with the deposits of carbon inside the bulb. However, Edison did notice something else. If the metal plate was made positive with



respect to the filament his galvanometer (an early current measuring device) showed a flow of current. But, if the leads to the metal plate were reversed and the plate made negative with respect to the filament, his galvanometer registered zero and the bulb didn't light anymore. Further testing and measurement showed that the more positive the plate, the higher the current. He could **control** the flow of current through the bulb - even shutting it off at will, depending on the polarity (plus or minus) of the plate.

Hunkered down in his lab he eventually figured out the carbon problem and would, with great fanfare, introduce to the world a safe way to light our homes, offices, and factories. Later, he would bring music into our homes and then show us a world in motion with moving pictures. After his stunning success with the elusive electric light, Edison basked in the public's adulation. They even nicknamed him "The Wizard of Menlo Park." But what can we make of his almost casual dismissal of the ability to control current flow inside the bulb, or the even greater mystery of how current was flowing *without a wired connection*? Was he too focused on getting his light to market to consider the implications? Did the "Wizard" suddenly get a cramp in his vision muscle?

As it turns out, Edison was not the first to observe how super-hot metal could produce a flow of electrons. French physicist Edmond Becquerel wrote about it back in 1853, and over the years other scientists and physicists made similar observations. They came to call it Thermionic Emission. None had the audacity - or were so opportunistic - to name the effect after themselves. The Wizard did not suffer from the same lack of hubris - he called it the "**Edison Effect**." We know Edison made some effort to find a practical use for "his" effect, taking precious time away from his work on the light bulb to file a patent - as a voltage regulating device. U.S. patent 307,031 (you can see it here) has the distinction of being the first US patent for an electronic device.)



His safe and affordable light bulb led an adoring public to call Thomas Edison the Wizard of Menlo Park

So, what did Edison, the man who was personally responsible for some of the most impactful inventions of the 19th century, miss? Only one of the most impactful inventions of the 20th century. Ironically, the breakthrough would come from a

former employee of Edison's Electric Light Company.

This part of the story begins at the International Electrical Exposition in 1884, where Edison had rigged up a demonstration of his special bulbs to automatically set off a telegraph sounder. The demonstration caught the eye of William Preece, a visiting British scientist, who brought several Edison Effect bulbs back home to England where the bulbs - and the effect - were the subject of much discussion. Physicist Owen Richardson started researching the phenomenon in 1897 and it was he who coined the more scientific term "thermionic emission" for the effect. Thirty years later he would receive the Nobel Prize in Physics for this work.

John Fleming was another British physicist who ultimately produced several game-changers in the field of electronics. Fleming has an interesting backstory - he had once worked as an electrician for Edison's company in the UK before he became one of the world's first professors of electronics in 1884. His expertise with electrical power systems was so well known in 1899 Guglielmo Marconi hired him to the build a 25kW spark gap transmitter on the western coast of England. In 1901 Fleming's transmitter was - allegedly, some say - heard sending the letter "S" in Morse Code on the other side of the Atlantic in St. John's, Newfoundland. Marconi next assigned Fleming the task of improving radio reception, at the time all Spark Gap. (Spark Gap was, with all due respect, really nothing more than sending bursts of electro-mechanically created static in Morse Code. Spark Gap receivers were also electro-mechanical devices known as "coherers," basically a tube with iron filings between two electrodes which responded to the electromagnetic signal created by the transmitter.) In 1904 Fleming, using the principle of the Edison effect, built the first vacuum tube radio wave detector, known technically as a two-electrode diode. This tube is widely considered to be the beginning of modern electronics. Fleming's tube greatly improved the ability to pick up weaker spark gap stations, but its use extended far beyond the spark gap era. Even as late as the 1970s, before the advent of reliable high-power semiconductors, radar and other receivers were still being designed with Fleming's device.

In 1906 American Lee DeForest added a third wire between the cathode and plate of Fleming's diode which, depending on the voltage applied to it, *controlled* the flow of current between the cathode and the plate. Called a *control grid*, it enabled the amplification of electronic signals, the foundational invention needed to kick-start long-distance telephone, radio, radar, and some of the first computers. With the exception of H.G. Wells or Jules Verne who could imagine those tech marvels being a daily part of our lives? Which is why I tend give 1886 Edison a break. What he did not see was, in all fairness, what few people could – an unprecedented revolution in electronics made possible with that strange effect.

This article is from a blog authored by David Kruh and was originally posted on Analog Devices EngineerZone community in The EngineerZone Spotlight blog on 20 May, 2020. You may find a listing of David Kruh's blogs here:
https://ez.analog.com/search?q=radio#serpauthor=61394&serp=1

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FLORIDA FARMER GETS DINNER CALL BY RADIO

Here's Daniel Talbot, a farmer of Florida, whose immense acreage takes him for some distance from his farmhouse and out of the range of sound of the dinner call. So he's rigged up a small radio set which he attached to his plow. When it's time to eat, Mrs. Talbot, at their home, sounds the call through the transmitter, which Farmer Talbot picks up while at work.

An inside illustration from the book featured on the cover of this edition: **RADIO - Miracle of the 20th Century** *from the collection of Tom Kleinschmidt*

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