



# ARCI NEWS

[www.antique-radios.org](http://www.antique-radios.org)

Affiliated AWA  
Antique Wireless Association 

Volume 42, Issue 2  
April, 2022

# RADIOFEST

IS  
BACK

AUGUST 5 & 6 2022

## ARCI CALENDAR

EVENT	LOCATION	DAY & DATE	TIME
Swap Meet	American Legion	Sunday, April 24, 2022	7:30 am
Virtual Forum	Your computer	Saturday, May 21, 2022	10:00 am
Swap Meet	American Legion	Sunday, June 26, 2022	7:30 am
<b>RADIOFEST</b>	Medinah Shriners Center	Friday, August 5, 2022 Saturday, August 6, 2022	See Program
Virtual Forum	Your computer	Saturday, September 17, 2022	10:00 am
Swap Meet	American Legion	Sunday, October 2, 2022	7:30 am
Virtual Forum	Your Computer	Saturday, November 19, 2022	10:00 am
Swap Meet	American Legion	Sunday, December 4, 2022	7:30 am

American Legion Hall Meetings are located at:

Post 76  
570 S Gary Ave  
Carol Stream, IL 60188

About ARCI Virtual Forum video sessions

10 AM to 11:30 AM Central time, check-in starts: 9:45 AM Central Time  
Generally held on the 3rd Saturday in non-summer months

Agenda items (subject to change)

History  
Tips & Tricks  
Technical  
How-to's  
Show & Tell  
Items for sale  
Open chat session

To find out more, email: [remote-events@antique-radios.org](mailto:remote-events@antique-radios.org)

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## WELCOME TO ARCI

### Visit ARCI on the WEB

Website: [www.antique-radios.org](http://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	Tom Zaczek
Treasurer	Rudy Hecker
Secretary	Jay Stewart
Membership	Elaine Hecker
Radiofest chair	Steve Muchow
Director on-line events	Matt Pollack
ARCI News editor	Maureen Blevins

### Contact ARCI

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LaGrange Park, IL 60526  
[clubinfo@antique-radios.org](mailto:clubinfo@antique-radios.org)  
630-739-1060



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## PRESIDENT'S MESSAGE

April, 2022



The next swap meet is April 24 at 7:30 AM at the American Legion in Carol Stream. It will be outside unless weather is poor. The building will open for club business and restrooms at 7:30 AM. Outdoor start time cannot be controlled as it is an open parking lot. Try to comply with 7:30 in respect for your fellow treasure hunters.

American Legion Post 76  
570 S. Gary Ave  
Carol Stream, IL 60188

ARCI On-line Meet is now **ARCI Virtual Forum**. The word *meet* caused some confusion as to an event being a face-to-face swap meet or on-line virtual meet. The name change and consolidated event schedule inside the front cover are designed for clearer communication. The Virtual Forum program, content and YouTube presence continues on as the former On-line meet. The next Virtual Forum is May 21, 2022. More details in Tom Zaczek's report. Direct inquiries: [remote-events@antique-radios.org](mailto:remote-events@antique-radios.org)

**Radiofest** returns Friday August 5, 2022, and Saturday August 6, 2022, at Medinah Shriners in Addison, IL! Medinah Shriners has proven to be a fabulous venue with the Hilton Garden Inn just walking distance away. Details in *Radiofest* chair, Steve Muchow's report.

**Volunteers** are needed for Radiofest and ongoing club operations. *Radiofest* has openings in "back office" administration and during the event.

*Radiofest* needs additional help for:

1. Parking assignments for swap meet
2. Swap meet parking lot (chalk-marking spaces, waste baskets, etc.)
3. Registration on-site
4. Club merchandise sales
5. *Radiofest* handout materials (name tags, windshield signs, maps, etc.)
6. Assist with on-site appraisals (selected times on Saturday only)

The club needs help with:

1. Setup at swap-meets
2. Donated equipment pickup and management
3. Additional repair services for members and the general public
4. Website upgrade
5. Articles for ARCI News – *whatever you are doing in radio is of interest*

to others

6. Marketing: email blasts, advertising copy, website content
7. Presenters for ARCI Virtual Forum

Updates for all of the above are sent out via email first, in addition to the website and specific mailings. If you wish to join email notification, contact us at: [Clubinfo@antique-radios.org](mailto:Clubinfo@antique-radios.org).

I hope to see you in person on April 24<sup>th</sup> and over the internet on May 15<sup>th</sup>.

*Tom Kleinschmidt*  
[Clubinfo@antique-radios.org](mailto:Clubinfo@antique-radios.org)



# *RADIOFEST 2022*

## **August 5 & 6, 2022**

- Famous Friday Auction
- Big Saturday Swap Meet
- Educational Programs
- Large Donation Sale and Auction
- More

### **Same great location!**

Medinah Shriners  
550 North Shriners Drive (Swift Road)  
Addison, Illinois 60101  
[Home - Medinah Shriners](#)

### **Directly adjacent Hotel**

Hilton Garden Inn  
551 North Swift Road  
Addison, Illinois 60101  
(630) 691-0500  
Online Hotel booking:

[www.my-event.hilton.com/chiahgi-radio-b68bfb5d-6f24-4095-982d-ab4bdc1de4f1/](http://www.my-event.hilton.com/chiahgi-radio-b68bfb5d-6f24-4095-982d-ab4bdc1de4f1/)

Ask for "Radio Group" rate of \$99.00 (ends July 22)

### **Additional Services**

Food and bar service  
Ample free parking  
Excellent facilities

*Registration details coming soon*



## ARCI UPDATE

A few photos from our **February, 2022 SWAP MEET** which was held at the American Legion Hall on S. Gary Ave in Carol Stream, IL. *Photos by Daniel Schoo*



The February meet was well attended. We had new faces on both the buy and sell sides. Expanding advertising to Craig's List had a positive impact.

Feedback on new fixed start time was mostly positive. Some sellers would like time to set up before buyers arrive. The issue is perceived as preselling among sellers is being unfair to buyers. One buyer commented he preferred it to be all set up beforehand. No perfect system. Please continue giving your feedback as it is an evolving process.

Preconfiguring tables just before doors open vs. as-we-find-it from the last Legion Hall event worked out well. Everyone seemed happy with the Feng Shui in each room.

Donation sales were lower than usual as was the volume and value of product offerings. ARCI brought in around \$300.

*~Tom Kleinschmidt*







### SWAP MEET Updates

1. **Indoor** swap meet **start time** is now **7:30 AM**. In the interest of fairness and accuracy **doors will be locked until 7:30 AM**. This began with the February 2022 swap meet.
2. **APRIL** swap meet **NEW DATE** is now **24 April 2022** at the American Legion hall. There is a conflict at the Legion Hall on the original date.
3. **More room!** We have expanded into the bar.
  - a. The entire public area of the main floor at the Legion Hall is ours to use.
  - b. Starting in February tables will be set up in a pattern to optimize traffic flow.
  - c. Donation sale / auction items will be in the bar – no longer on the stage cluttering movement.

#### Next swap meet

Date: **Sunday, 24 April, 2022**

Times: **Doors open at 7:30 AM, meet ends by 11:00 AM**

Location: **American Legion Post 76**

**570 S Gary Ave**

**Carol Stream, IL 60188**

**ARCI June 2022 swap meet UPDATE**

**Sunday - June 26, 2022**

**American Legion Post 76**

**570 S Gary Ave**

**Carol Stream, IL 60188**

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

## RADIOFEST 2022 PLANNING UPDATE

By Steve Muchow, *RADIOFEST* Chair

# Radiofest 2022

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

**LOCATION:** We will return to the **Medinah Shriners in Addison, Illinois**. This modern, upscale facility is across from a **Hilton Garden Inn**. 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.

**HOTEL:** Our official hotel for *Radiofest 2022* is the Hilton Garden Inn, located directly adjacent to the Medinah Shriners complex, and is a very short walk from the banquet facilities and parking lots. Medinah Shriners and Hilton Garden Inn are completely independent entities, but they coordinate closely on events. Once again, the hotel has set aside a block of rooms for *Radiofest 2022* attendees of \$99 per night. This is a really nice hotel at a great price. You will not be disappointed! Reservations at the hotel are now open via the hotel on-line booking link:

[www.my-event.hilton.com/chiahgi-radio-b68bfb5d-6f24-4095-982d-ab4bdc1de4f1/](http://www.my-event.hilton.com/chiahgi-radio-b68bfb5d-6f24-4095-982d-ab4bdc1de4f1/)

Or, you can call the hotel at: 630-691-0500. Mention “RADIO GROUP” to the friendly reservation agent to get the special discount rate. Note that reservations must be received by July 22, 2022 to receive our special rate.

**SCHEDULE:** We will have 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 sale/auction. Additional Saturday activities will include speaker programs, the popular ARCI outdoor ham station and an evening dinner/banquet. Further details on all aspects of *Radiofest 2022* will be posted on the ARCI website [www.antique-radios.org](http://www.antique-radios.org) as well as future issues of ARCI NEWS and periodic e-mails/mailings from ARCI.

**AUCTION:** The opening night auction will be in the Medinah Crescent Ballroom. The large quantity and excellent quality of items available in the auction make this a “must attend” event. You never know what you will find here, including rare and highly collectible items. Jim Sargent from VRPS is returning as auctioneer.

**PROGRAMS, DONATIONS & BANQUET:** Our speakers’ programs and the popular Donation Auction will occur on Saturday followed by the Carl and Carolyn Knipfel banquet on Saturday night.

**REGISTRATION:** An on-line and traditional paper registration process is being finalized. Details coming soon.

**VOLUNTEERS:** We need volunteers at *Radiofest*. Those that have volunteered in the past expressed that they enjoyed helping out. They met new collectors and learned a little bit about vintage radio along the way. Let me know if you are interested. [smuchow@att.net](mailto:smuchow@att.net)

**UPDATES:** Watch for additional *Radiofest 2022* information in future issues of the ARCI NEWS, *Radiofest* mailings and our ARCI website [www.antique-radios.org](http://www.antique-radios.org).

Mark your calendars and start making plans to attend! Please feel free to contact me at [smuchow@att.net](mailto:smuchow@att.net) should you have any questions, comments or suggestions.



## *RADIOFEST 2022*

**Friday August 5 – Saturday August 6**

**Medinah Shriners**  
**550 N. Shriners Drive**  
**Addison, IL 60101**





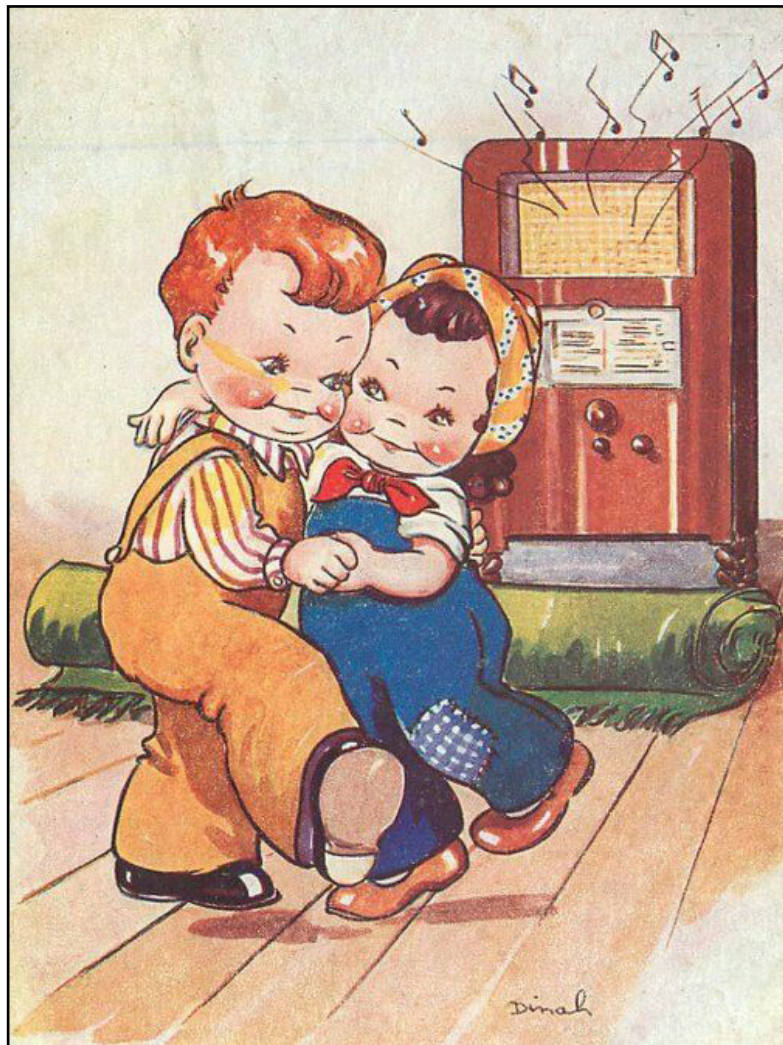


click on either of the following links for the membership form:

[Antique Radio Club of Illinois \(antique-radios.org\)](http://www.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 Virtual Forum Team:** Tom Kleinschmidt, Bill Cohn, Matt Pollack and Tom Zaczek are the ARCI On-Line Meeting Team and can be reached via email at [remote-events@antiqueradios.org](mailto:remote-events@antiqueradios.org)



## Restoration of Two More Emors: The Cracked Faberge Eggs of Radios

by Gary Albach

*This is the third article in ARCI News about Emor radios in recent times. Information is sparse on the company and its pre-space-age space age radios. It is felt that adding to the body of knowledge is valuable to the hobby. The other two articles are in ARCI News issues of December 2020 and June 2021. Back issues of the newsletter are on the ARCI website at: [http://www.antique-radios.org/ARCI\\_news.html](http://www.antique-radios.org/ARCI_news.html)*

I hadn't planned to write a follow-up article on the restoration of Emor Globe radios after my initial submission in the May/April 2021 issue of Canadian Vintage Radios, but two came up for sale at attractive prices and I found myself with two more of these quirky radios in need of work. I've now located forty of these radios worldwide and think it odd that five now reside in Victoria (and ten in a museum in Germany!).



My two new ones are similar to the first one I got: made by Faust about 1947 in Montreal with the same 'hand-crafted' appearance to the wiring and the chassis. But unlike the first one which had its aluminum globe in pristine appearance, the globes on these two were badly dented. One was the original anodized red and the other had been repainted gold over an original green anodizing.

After the dents had been removed, one



globe was smooth enough to polish and chrome plate, but the other one required automotive body filler to

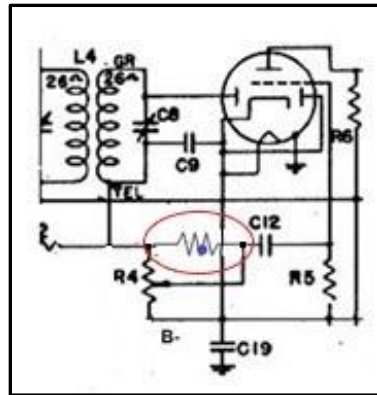
achieve a smooth surface. So, I decided to have one chromed (chrome was a factory finish) and the other painted blue to match one of the other original factory colours.



The action of the volume control potentiometer is a peculiarity of these radios. A cut-out in the chrome pole limits the rotation of the volume control ring to 180 degrees. This in turn limits the rotation of the

potentiometer to this same degree and limits the maximum volume that can be achieved. (This photo also shows the heavy grease that covered the inside of the rotating parts on one of the units. I cleaned it off and lubricated the parts with white lithium grease.)

A simple work-around for the volume control is to install a 47k resistor between the top (high) end of the volume pot and the wiper as shown in the schematic. One of my radios came with this resistor installed, the other two didn't.



I thought it odd when I was restoring the first Emor that it was possible to rotate the dial past the limit of the rotation of the tuning capacitor by slipping the dial cord and thus throwing the dial out of alignment

w i t h

the tuning cap. But I could find no evidence of a stop for the dial. The second Emor cleared up the mystery as shown in the photo at the left. There is an L-shaped bracket bolted



to the chassis that limits the rotation of a bolt threaded into the shaft for the dial cord. The third Emor also did not have this bracket although, like Emor #1, it had the bolt protruding from the shaft! I didn't like this bracket arrangement as clearly it falls off when loosened by constant blows from the rotating bolt, so on Emor #3 I installed the arrangement shown on the right. A vertical bolt takes the place of the L-bracket, and the diameter of the bolt on the dial cord shaft is expanded with a large nut, to match the angle of rotation of the tuning capacitor.



I encountered an obstruction in the top section of the pole when attempting to thread the line cord and antenna wire back down to the floor base of Emor #2. Removing the pole from the radio is a bit of a chore at a late stage of assembly because of all the internal concentric controls but when I got everything apart again, I discovered a rolled-up wad of wet cardboard tightly jammed inside the pole! It was probably wet from the chrome plating solutions but what was it doing there? No idea except to speculate that it was meant as a 'cable relief' to prevent the original line cord and antenna wire from pulling loose from inside the radio.

The speaker grills on the top of the globes are made from cheap 'pot metal' and sections were crumbling on the third Emor. Pot metal is a cheap alloy of zinc and whatever non-ferrous scrap metals the foundry had on hand to throw into the melting pot. Its composition is uncontrolled and varies from batch to batch. Over the years the metal expands because of corrosion between the metallic grains - it effectively rusts from the inside out and eventually blows itself apart and crumbles. The metallic grills on all three globes had expanded to such an extent that the mounting holes in the grills no longer lined up with the holes in the globes. Previous owners had dealt with this problem by removing some of the screws. One of the grills had never been removed and had expanded so much that the pressure on the mounting screws had cracked the delicate spiderweb pattern and pieces were falling out. They fell into the speaker, so I was able to retrieve them and epoxy them back into the spiderweb pattern. I filled all visible cracks in the metal with thin superglue and elongated the mounting holes in the grill with a diamond burr on my Dremel to match the holes in the top of the globes, keeping vibration to a minimum to avoid any further shattering of the metal.





The pulley was loose on the shaft of the tuning cap so I put a drop of superglue on the shaft to secure it. This was a mistake because the pulley has to be in a particular rotation to allow the dial cord to fully wind and unwind. I hadn't realized how strong super glue can be and I couldn't get the pulley off! I finally resorted to heating the joint with a small torch, working the pulley off and putting it back on in the correct orientation. The residual super glue provided enough friction to secure the pulley the second time.



And finally, a word about grounding these old sets. The original circuit has the typical configuration of a .05 uF paper capacitor between one side of the line cord and the metal chassis. The radios have a power transformer, providing isolation from the power line. However, the plug was unpolarized meaning that the chassis could be connected by the capacitor to either the hot or the neutral side of the line depending on the orientation of the plug in the socket. In today's world, there is so much RFI on all the line wires that all the capacitor does is to bring that RFI directly to the chassis. I removed the line cap on all three sets, installed polarized line plugs with the hot side switched, and there is no noticeable increase in the RFI.

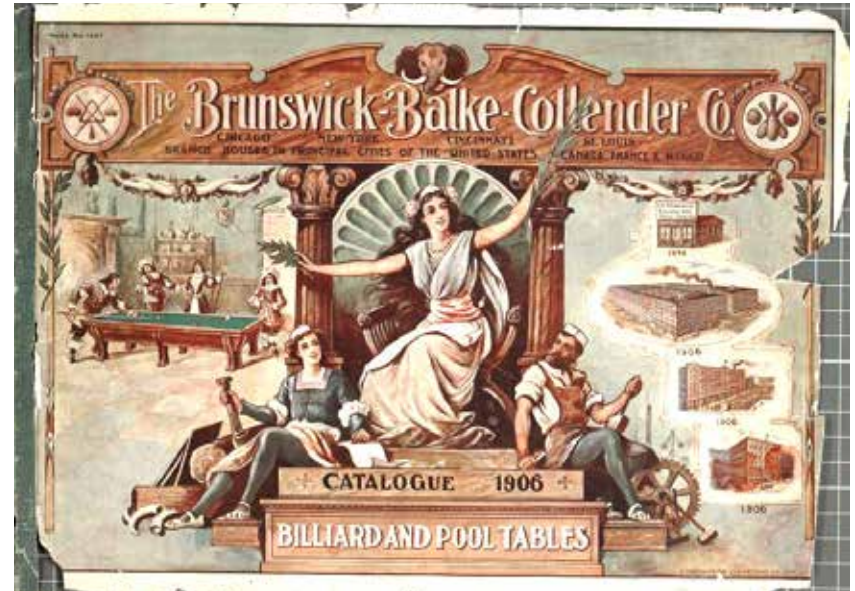
Removing the line cap also eliminated the 'tingling' that was felt on the metal pole and the globe when operating the controls. This makes sense because all the controls are metal, and an appreciable current can flow through a .05 uF cap from the hot side of the line to our body.

*Permission to reprint by Gary Albach and the Canadian Vintage Radio Society (CVRS). Originally published in the CVRS Newsletter February 2022.*



## Billiards, Bowling, and Boating: 175 Years of Brunswick

by Gary Hoover



A current buzzword is "pivoting," which means changing your company's strategy and direction, often into entirely new businesses. Pivots are frequent in young companies trying to find the best markets and a footing for future opportunities. Here we look at a very old company which has survived wave after wave of mergers and remained independent, but over its life has made an amazing array of products, including widely known consumer products. Despite 175 years of ups and downs, Brunswick Corporation soldiers on toward its third century.

### Working in Wood

John Moses Brunswick was born to a Jewish family in the German-speaking part of Switzerland in 1819. Seeking new opportunities, John took the forty-day Atlantic crossing to the United States just before he turned fifteen. Landing in New York in 1834, he found work as an errand boy for a German butcher. John Brunswick observed the massive number of carriages of all types, shapes, and sizes jamming Gotham's streets. But the intensity was too much. Brunswick soon moved to the quieter Philadelphia, where he got on as an apprentice to a carriage-maker.

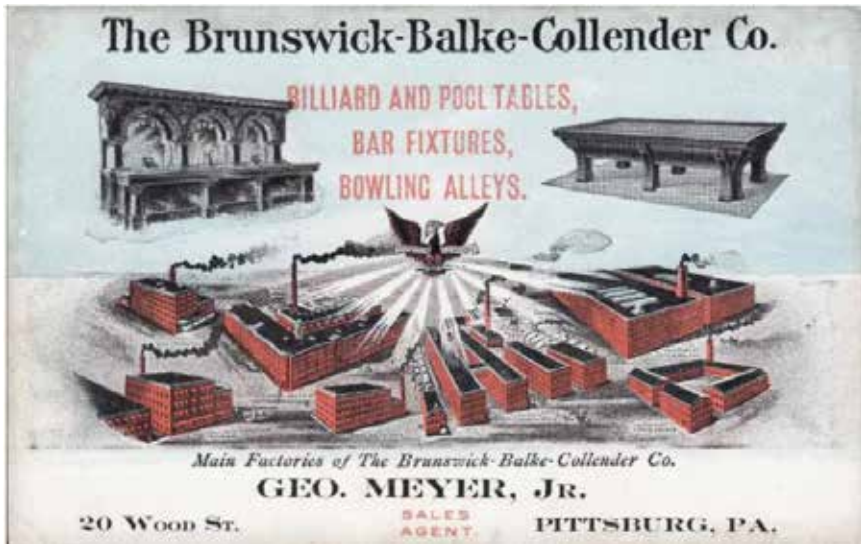


J. M. BRUNSWICK



For four years, Brunswick learned carriage building in Philadelphia before moving to Harrisburg as a journeyman to a German woodworker named Greiner. Brunswick soon married Greiner's daughter Louisa and could have inherited Greiner's business, but wanted to start out on his own. The booming city of Cincinnati, Queen of inland America and home to a large German community, drew John and Louisa, who settled there in 1840.

In Cincinnati, John worked for a series of carriage makers as a journeyman. When one employer closed up, he took a job as a steward on an Ohio River steamboat. Brunswick showed a head for trading, buying low and selling high along the river. He soon had a nest egg big enough to start his own firm. The twenty-five-year-old woodworker opened The John M. Brunswick Company to make carriages in 1845. The company soon expanded into making chairs, tables, and cabinets. Brunswick said, "If it is wood, we can make it. And we can make it better than anyone else." Shortly after founding the new company, someone showed young Brunswick a beautiful, heavy, expensive English billiards table. Despite historical connections with gambling and "the low life," three-cushion and pocket billiards began to catch on in America. John knew he could build equally beautiful billiard tables, saving the expense of importing them from Europe.



The competition in billiard tables was intense. Brunswick battled Julius Balke's Great Western Billiard Manufactory of Cincinnati and the leading eastern company, Phelan & Collender of New York. In 1873, Moses Bensingler played a key role in Brunswick's merger with Balke. The combined company produced 700 tables a year with a value of \$400,000. In 1879 Phelan & Collender was acquired. The company was renamed Brunswick-Balke-Collender in 1884, a name used until 1960, when the company became Brunswick Corporation, the title used today.

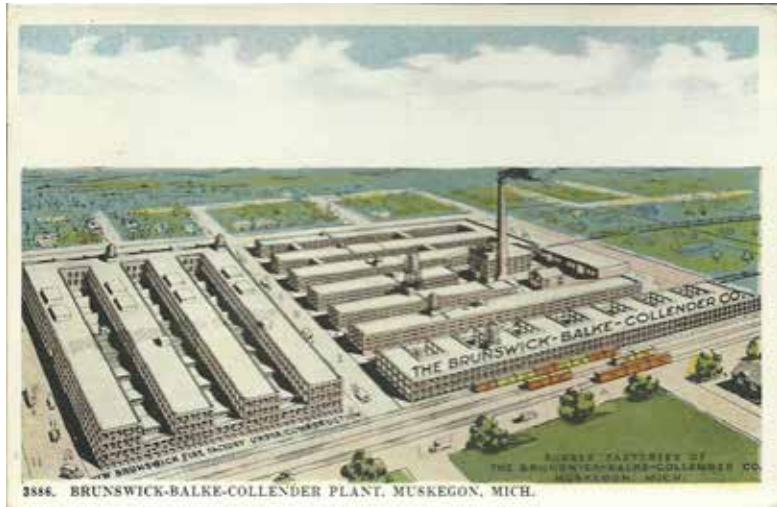
Thus, by the late 1880s, Brunswick-Balke-Collender dominated the American billiards industry and was the largest billiards manufacturer in the world. The company's leaders were innovators in billiards rules, billiards organizations, and billiards equipment, producing better cues and rubber cushions (bumpers). Brunswick's products won award after award at international expositions. Between 1881 and 1883, the company built a new Chicago complex at Huron and Sedgwick streets. Designed by famous architect Louis Sullivan, the facility included a factory, warehouse, and lumber-drying plant.

John Brunswick died in 1886; Moses Bensingler (who had moved to Chicago) became President in 1890. The company's great strength was in beautiful, quality wood working: Bensingler expanded the company into building elaborate wooden bar backs. A new factory was built in Dubuque, Iowa to produce the bars. As was always the case, Brunswick made hundreds of specialty and accessory products such as billiard table lamps, coolers, and lunch counters to serve the same markets.



Moses Bensingler noted a rising sport in America: bowling. Descended from ancient games, bowling began to appear in America as taverns added a few lanes. Brunswick began making lanes, pins, and wooden bowling balls. The sport was not well-organized, using different rules, lane lengths, and ball sizes. In the 1890s, Bensingler led an effort to standardize bowling, resulting in the formation of the American Bowling Congress (ABC) in 1895. The first ABC tournament using standard rules took place in Chicago in 1901. Brunswick produced all the equipment for the match, as they did for the next 40 years.

Moses Bensingler's son Benjamin, who had joined the company in 1885, took over as President at the age of thirty-six upon his father's death in 1904. In his efforts to keep up with rising sales, Benjamin opened a 100,000 square foot factory in Muskegon, Michigan on the Lake Michigan shore. The big new facility was near Brunswick's 1,000 acres of timberland and an easy crossing of Lake Michigan from the Chicago factories (on Brunswick's ships). By the 1940s, this plant, Brunswick's largest, would grow to one million square feet.



Ever searching for ways to improve its products, the company introduced the revolutionary Mineralite rubber bowling ball in 1906. (Because of their continual research into the properties of wood, rubber, and other materials, the Brunswick of 100 years ago might today be called a “materials science company”).

Brunswick-Balke-Collender moved its headquarters from Cincinnati to Chicago in 1908. The company had sales offices and showrooms in twenty-seven US cities, Honolulu, London, Paris, Buenos Aires, and Mexico City. It was the world’s largest buyer of hardwoods and operated the largest lumber drying kilns on earth. Maple went into 400,000 cues a year, dark woods into billiards tables weighing up to 2,700 pounds. No company had a finer reputation for woodworking and product quality. Brunswick was becoming a household name. Yet there was a cloud on the horizon.

In 1846, Maine passed the first state temperance law. Gradually, prohibitionists swept the nation. The 1906 formation of the Anti-Saloon League accelerated and intensified the movement, as bars were attacked and busted up. Demand for new bars began to shrink. Benjamin Bensinger saw the writing on the wall and feared for the future of the bar furnishing business, which made up one-fourth of the company’s four million dollars in sales. He began cutting back on the production of the beautiful, expensive bars, ending production in 1912, seven years before the passage of national Prohibition. Benjamin began a search for new products to replace the lost sales.

Beginning a long history of expansion into related niche products, Benjamin found several opportunities. First was another use for rubber, with which the company had expertise in both billiards and bowling. In 1912, Brunswick introduced the first rubber toilet seat, the Whale-Bone-Ite. The company was soon selling

120,000 toilet seats a year. An early adopter was Chicago’s Pullman Company, operator of the nation’s railroad sleeping cars.

For a brief period, Brunswick jumped on the piano boom, using its woodworking skills to make piano cases that were sold to the major piano makers. Getting in and out of different businesses became a Brunswick tradition throughout the 20th century.

Headlines were made when American billiards star Willie Hoppe shockingly beat “the world’s best,” Maurice Vignaux, in Paris in 1906. Hoppe then toured the US doing trick shots, drawing enormous crowds. The popularity of billiards took a leap upward: by the 1920s, there were more than 42,000 American pool rooms; 4,000 in New York City alone. Detroit’s Recreation pool hall had an amazing 142 tables. San Francisco’s Graney had a 400-seat spectator gallery. Thousands of men were employed as “pin boys,” carefully resetting the ten pins after each turn. Brunswick supplied the boom, organized tournaments, and published the rules. Brunswick-Balke-Collender was billiards.



Another industry that soared in the 1910s and 1920s was the automobile business. Benjamin used the company’s expertise in rubber to enter the tire business in 1912. By 1921, the Muskegon factory was turning out 2,000 tires a day. Yet competition intensified as two hundred tire companies were founded. In 1922, Brunswick sold their tire business to BF Goodrich, which continued to make Brunswick tires.

In the midst of that era, Brunswick made wooden airplane wings and other defense materials during World War I.

Benjamin Bensinger’s next expansion was into phonograph cabinets, responding to another booming consumer trend. Brunswick-Balke-Collender soon had a million dollars in orders for these exquisite pieces of wooden furniture, largely from the Edison Phonograph company. It was not long before the company began making complete phonographs. In 1916, Brunswick introduced a model that sold for \$150 (about \$3700 today) but was the equal of competitors’ models priced at \$250. In 1915, there had only been eighteen phonograph makers; four years later, in 1919, two hundred manufacturers produced over two million phonographs. That year, Brunswick made \$700,000 in profits from cabinets and complete phonographs, of which the company built 750 a day.



Brunswick-Balke-Collender went public in 1924, allowing outsiders to own stock in the company for the first time.

The company added radio manufacturing when the radio boom hit in the early 1920s. In 1925, Brunswick joined with General Electric to produce the first all-electric phonograph (as opposed to hand-cranked), the Panatrophe, for \$350 and up.



*Brunswick Panatrophe Phonograph*

The company's success with phonographs led Benjamin to enter the record business. The first Brunswick record was produced in 1922. Soon Duke Ellington, Cab Calloway, and many other recording artists, including classical performers, were making records for Brunswick.

Few companies have jumped on (and off) and profited from as many different "hot" industries as has Brunswick.

By 1928, Brunswick-Balke-Collender was a large company for the time, recording sales of \$29 million. The next year, the stock market collapsed, and with it, the economy. Discretionary and recreational spending went into a tailspin. Benjamin Bensinger realized dramatic measures would be required if the company, \$9 million in debt, were to survive. In 1930, he sold the Brunswick Panatrophe & Radio Corporation, including the record division, to Warner Brothers for \$10 million. While some might say that he sold a business with big potential, most believe the move saved the company. Brunswick Records, after several owners, continue to be sold today.

Benjamin Bensinger's oldest son Robert assumed the Presidency in 1930, an inauspicious time to take the helm of any company. "Bob" Bensinger was thirty-two years old and had eleven years' experience at the company. He was assisted by younger brother Ted. Father Benjamin died five years later.

In that brief period, the company hit the rocks. 1928's record sales of \$29 million dried up. In 1932, the sales figure was \$3.9 million, a drop of almost 90%. Few companies were hit that hard even in the Great Depression, but most

of Brunswick's revenue was from recreational spending. The continuation of prohibition (until 1933) did not help. After years of profits, in the early 1930s Brunswick recorded losses of a million dollars a year. It is impressive that the Bensingers even bothered carrying on.

Yet carry on they did. Bob Bensinger quickly searched for new opportunities. With the end of Prohibition in 1933, Brunswick began producing coolers and table top refrigerators, led by "the Blue Flash." Soda fountains were added in 1935. Gradually the bowling and billiards businesses began to come back. Bob Bensinger also recruited new talent and managers to revive the company. But it took World War II to really restart things.

Brunswick cranked up rapidly to meet the nation's wartime needs. Included in the long list of items manufactured by the company were parachute bomb flares, assault boats, aircraft fuselages, landing skids for gliders, mortar shells, aircraft instrument panels, and rubber fuel cells. Adding to its arsenal of materials knowledge, Brunswick developed Brunsalloy, a lightweight but extremely strong metal alloy used as a substitute for aluminum in airplanes. Brunswick was back in business, registering \$20 million in sales in 1942. At the same time, the rise of the USO to entertain service personnel led to better recreational facilities on military bases. Thirteen thousand billiard tables and three thousand bowling lanes were installed on bases worldwide by the end of World War II.

After the war, Americans returned to "normal" and the economy boomed. This should have been a great time for Brunswick. The company had also entered the school furniture business, seeing the coming boom in education and school construction. (Most Americans have experienced the award-winning Brunswick school chair.) Sales rose to \$30 million in 1948. But another problem soon arose.



The American Machine and Foundry Company, commonly called AMF, was the leader in tobacco machinery which rolled cigars and cigarettes. Like Brunswick, AMF was always on the lookout for new markets. Brunswick

*Brunswick school chair*

had been toying with the idea of an automated pinsetter for years, but in the 1930s turned away two inventors who thought they could make one. Those inventors took their idea to AMF, which decided to pursue the project. In 1946, AMF began to introduce their automatic pinsetters. At first, they did not work, but by 1952



AMF was successfully producing its machines, branded “AMF Pinspotters.” Alley owners and bowlers loved them. Brunswick was literally “behind the eight ball”. And, in 1950, Bob’s brother Ted was named President of the company, with Bob remaining as Chairman of the Board. The two brothers faced a challenge perhaps as great as the Depression had been.

Under Ted’s leadership, the company needed to develop an automatic pinsetter, but did not have the \$10 million required for research and development. Ted cut a deal with the Murray Corporation of America, which made automobile bodies for Ford but had just lost that contract. Murray had cash and was looking for new opportunities to apply its metal engineering skills. Brunswick and Murray formed a 50-50 partnership, the Pinsetter Corporation. Using Murray’s cash, the first pinsetters were manufactured for the partnership by the Otis Elevator Company, which also understood machinery. Sensing a major opportunity, Murray tried to buy Brunswick out of the partnership. But Ted Bensing was able to arrange a \$55 million line-of-credit with financier CIT Financial Corporation. When the Murray executives showed up at a meeting, planning on buying out Brunswick’s interest in Pinsetter, Ted instead handed them an \$18 million check for Murray’s share of Pinsetter. Brunswick now had total control of the new product line, finally ready to ship in the spring of 1956.



By that time, AMF had already sold 9,000 of its Pinspotters. Nevertheless, Brunswick’s long history in bowling paid off. Revenues took off. Brunswick soon had \$30 million in pinsetter orders to fill. By the end of 1956, 2,000 of Brunswick’s \$8,000 Pinsetters were installed, followed by 7,000 more in 1957. Boosted by the “pinsetter wars” between Brunswick and AMF, bowling took off in the 1950s. Thousands of lanes were opened across America, often financed by Brunswick and AMF. Bowling alley owners included Mickey Mantle, Stan Musial, and Yogi Berra. AMF and Brunswick eventually operated their own large chains of bowling alleys (today consolidated into Bowlero Corporation). Between 1946 and 1960, the number of women bowlers rose from 82,000 to six million; youth bowlers from 8,000 to 185,000. Bowling was supported by



over one hundred specialty magazines and newspapers. Brunswick continued to play a key role in promoting the sport.

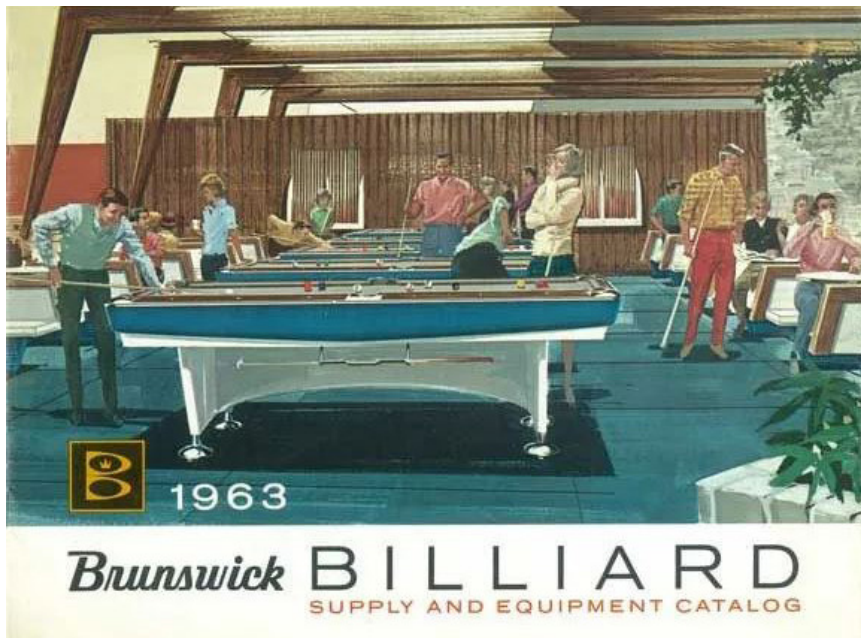
With additional support from billiards and school furniture, Brunswick boomed. From 1958 to 1961, the company expanded from 5,500 employees to over 16,000. In 1954, Brunswick-Balke-Collender earned profits of \$700,000 on sales of \$33 million. Seven years later, in 1961, profits were \$45 million on sales of \$422 million. The company had grown from being a niche industry supplier to become a Fortune 500 company. The company was loaded with cash, with more flowing in every day. The Bensingers were, finally, on top of the world. The family held about 10% of Brunswick stock, which rose dramatically.

Ted, rising to CEO in 1954, had a vision for the company. With the post-war growth in consumer spending, recreation looked like the place to be. Ted said he wanted the company to become “the General Motors of Sports”. With their newfound corporate war chest, in 1958 Brunswick bought sporting goods maker MacGregor, which made balls for all sports, golf clubs and bags, shoes for baseball and football, tennis balls and rackets, and many other items. (For more on the sporting goods industry, [see this article](#)).

Brunswick continued making acquisitions over the next few years, including Red Head outdoor clothing and equipment and Union Hardware, the largest maker of roller skates. A glimpse of the future took place when Brunswick bought the Owens Yacht and Larson boat companies (later sold). A more successful purchase was Zebco, the leading maker of closed-face spinning reels for fishing. (The company was originally named the Zero Hour Bomb Company, making time bombs for oil wells.) Zebco sales almost quadrupled from 1954 to 1957 alone.

Brunswick added new factories for its sporting goods empire and sold over 5,000 products in America and around the world. The company began a joint venture in Japan; Nippon Brunswick, to serve another exploding market for bowling. The billiards business boomed briefly as a result of the 1961 Paul Newman and Jackie Gleason movie, *The Hustler*. Perhaps the big strategic concept, “General Motors of Sports,” would work out.

At the same time, the Bensingers seem to have caught the “conglomerate bug” that swept through Wall Street and American industry in the 1960s. “Diversification”



and “synergy” were the buzzwords of the era. Maybe sports alone was not enough.

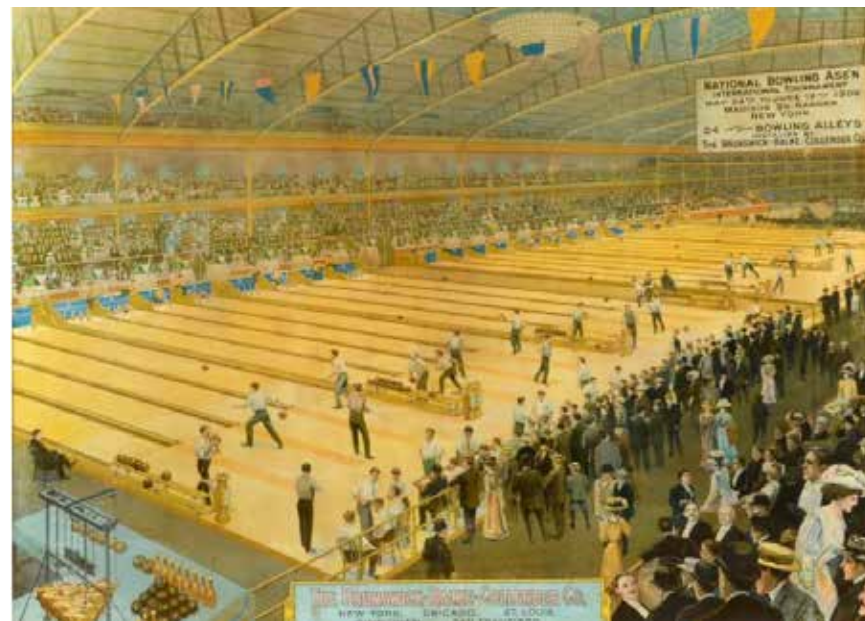
In 1959, Brunswick bought the AS Aloe Company, a medical supply house in St. Louis. By buying four more medical equipment companies, the company became a major competitor in hypodermic needles, catheters, and other categories. Brunswick consolidated these businesses into a unit named Sherwood Medical Industries, the nation’s second largest manufacturer and distributor of medical supplies. The company produced 4.5 million needles a week, four times the nearest competitor. Brunswick was now well-positioned in three industries with promising futures: recreation, education (school furniture), and healthcare. An extensive 1959 article in Fortune magazine entitled “Brunswick’s Automatic Money- Maker” included Ted’s remark that the company would become “The Mr. Big in recreation, education, and health.”

Brunswick also expanded upon its expertise in materials and defense products. They spent \$10 million developing Brunsmet, a metal fiber product with many uses from jet engine seals to anti-static carpet. A later acquisition made parts for the Viking Mars Lander. Brunswick became a major producer of aircraft radomes and camouflage materials for the military. A vast array of unusual and nice products made up a meaningful portion of the company’s revenues. In view of the company’s diversity, the name was finally shortened from Brunswick-Balke-Collender to simply the Brunswick Corporation in 1960.

Amidst this diversification and acquisition spree, Ted Bensinger made a purchase that would change the company long-term. In the summer of 1961, Brunswick

bought the Mercury Marine Company from company founder Carl Kiekhaefer for \$34 million in Brunswick stock. Kiekhaefer was a pioneer in the outboard boat motor industry, later producing inboard engines and stern drives as well. Mercury’s top-end engines competed with the Johnson and Evinrude lines of the industry’s dominant company, Outboard Marine Corporation (OMC). Under Brunswick, Mercury added the lower-priced Mariner line, produced in Japan by a joint venture with Yamaha.

Then, more quickly than it had risen, the bowling boom came to an end. A 1961 study commissioned by Brunswick indicated a US potential of 300,000 lanes (vs. 125,000 at the time). But that future was not to be. In 1962, demand for new bowling lanes came to a virtual halt. The thousands of bowling alleys that had been financed by Brunswick and AMF could not make their payments. Brunswick found itself almost \$400 million debt. The stock dropped from \$75 in 1961 to \$13 the next year. The Bensingers were once again “up against the wall.” For the first time in the company’s 118-year history, the family chose an outsider, Jack Hanigan, to take over as President of the company in 1963.



Hanigan and his successors continually restructured and streamlined the company. Businesses continued to be bought and sold. Organized into the four realms of recreation - marine power (Mercury), technical products, and medical products - Brunswick’s sales reached \$450 million in 1969, the highest since 1961. Under Brooks Abernathy, Hanigan’s protégé, sales reached one billion dollars for the first time in 1977, generated by 25,000 employees. Still apparently bitten by the conglomerate bug, Brunswick entered fields as far removed as doors and fare collection boxes for mass transit.



In 1981, Brunswick's profits set a record at \$66 million on sales of \$1.1 billion. Half the sales and two-thirds of the profits came from the health and technical divisions, including strong international results. Wall Street looked at the company and believed it might be worth more if broken into pieces. The fast-growing medical supply business was the gem. Diversified company Whittaker Corporation made an offer to buy Brunswick in 1982. To save Brunswick from the raider, the company sold Sherwood Medical to American Home Products (later Wyeth, then Pfizer) for \$425 million. Brunswick maintained its independence at the cost of losing a promising division.

For the next twenty years, Brunswick continued to try new things, ranging from bicycles (Roadmaster, bought from AMF) to re-entering the boat and yacht business. They bought into the camping business, including Igloo coolers. The acquisition spree continued in July 1997 as Brunswick paid \$310 million for Life Fitness, maker of stationary bicycles, treadmills, stairclimbers, rowers, cross trainers, and strength training equipment for fitness centers worldwide. Finally, by the start of the 21st century, Brunswick began to narrow its focus. The Technical division was spun out as the company slimmed down to boats, marine engines, and fitness equipment. Today this interesting, very old company, generates annual sales of three billion dollars in marine engines and about one billion dollars in the boat business (including Sea Ray, Bayliner, Meridian, Boston Whaler, Crestliner, Lowe, and Princecraft). The company is the world's largest maker of pleasure boats and certainly one of the top makers of marine engines. In recent years, virtually all of the company's profits have derived from marine engines. Bowling, billiards, and the other components of Brunswick's history have been sold off to an array of buyers. (Many products are still sold under the Brunswick brand name.)



Sea Ray

It is worth noting that former arch-rival AMF also diversified into more recreational products, including billiards and Harley-Davidson motorcycles (from 1969 to 1981). That did not work either; today AMF no longer exists. The same fate ultimately befell Brunswick's other key rival, Outboard Marine, a billion-dollar-company in the 1990s, though new owner Bombardier Recreational Products continued to produce Evinrude outboard engines until 2020.

Most great companies focus on one business and central skill. UPS, Deere, Caterpillar, Paccar, and Home Depot come to mind. Diversification (lack of focus) as a business strategy grew in the conglomerate era of the 1960s. Many of the companies that existed before the 1960s went the conglomerate route, then later "deconglomerated" (Colgate-Palmolive among the most successful). Other companies "pivot" once or twice, at most. Few companies make it to 100 years of age as an independent company.

Brunswick is the exception to all these "rules." The company has shown a strong will to live, a survival instinct that has kept it an independent company for 175 years.

Blowing with the wind, including conglomeration, Brunswick has usually been a leader in each of its many fields. From jazz records to camouflage, the company has a history of quality. In its 175 years, Brunswick has successively been the dominant factor in the billiards industry, the bar industry, the bowling industry, the hypodermic needle industry, and now the boat and engine industries.

Our study of great companies implies that they should usually stick to one industry. Perhaps even rename their company after their most important operation, as did Dayton-Hudson and Melville Corporation (becoming Target and CVS, respectively). Mercury Marine might be a good moniker for Brunswick as it stands today.

At the same time, the long history of this most interesting company forces us to wonder, "What industry will they try next, then lead, in the coming fifty years?"



This article was originally published on October 16, 2020. See the original in its entirety at <https://americanbusinesshistory.org/billiards-bowling-and-boating-175-years-of-brunswick/> Reprinted with permission.



## AM Radio Experience On The Road

by *Martin Linke*

*March 1, 2022* This past weekend I found myself at a family event in the town of Sheridan, Indiana which is located about 20 miles north of Indianapolis. It was late afternoon (5:00 PM) just about half an hour before sunset. It was time to drive back home to Chicagoland via Interstate Rt 65.

My current vehicle, a 2014 Buick LaCrosse has quite the communications offerings for the driver, including AM/FM radio, XM Sirius, GPS Tracking, CD player, USB dongle input to the audio system, Spotify internet service and possibly some features I have not yet discovered.

By the time I got onto I-65 northbound the sun was down and I decided to cruise the AM radio band. I imagine that every member of the ARCI has experimented with tuning the AM radio band at nighttime as I have, but I made some interesting observations this time around.

As I was traveling in central Indiana, basically the central Midwest of the USA, I was amazed to discover the amount of AM signals there were to be heard. There was a station to be monitored on every single frequency across the band. It was not just that every frequency had a station to hear but the signal levels were very strong [S-9+] with very clean audio and little atmospheric noise. The very strong 50K watt blowtorches from Chicago stations like WGN AM 720, WSCR AM 670, WBBM AM780 and WLS AM890 were solid copy during the entire 2.5 hour drive to Chicagoland. Of course those stations continued to gather strength as I got closer (with no selective fading) to my home base in Bridgeview, IL. In addition to the Chicagoland AM radio stations, also of significance were the other 50K watt stations like WCBS 880AM, WABC AM 770AM, both out of New York City, WCKY AM1530 Cincinnati and (a bit later in the evening) KOA AM850 Denver.

What was of keen interest to me on this trip was the reception of two AM power house stations from Canada; Zoomer Radio AM 740 CFZM (music format) and CJBC AM1610 (Spanish language format). Both of these Toronto based broadcasters put in an incredibly solid signal into the Midwest USA with music and news.

During my road trip that evening while monitoring these radio stations I was thinking about how important these AM radio stations must have been to the people of the rural farming community in the 1930s and the 1940s (before television) and how they must have cherished the radio programs of that era - all of the live radio drama shows, the comic shows and of course the news broadcasts of the day. At that time the news of the world (especially during WWII) was delivered by these AM power house radio stations after sunset when propagation would allow long

distance reception. The radios that they used (at least in the very early days) were powered by batteries, some recharged by farm machinery during the day and manually attached onto the radio chassis in the evening so that family members could get caught up on the events of the day. Quite unique for that time period Even with selective RF fading and summertime static crashes, the messages of the day were delivered by AM radio.

I believe this form of communication is the key motivation as to why ARCI exists and why its members want to preserve these radio receiver treasures. Our club members strive and succeed to keep this ideal alive. Yes, the world and our communication techniques have evolved and advanced over the last 80 to 90 plus years. Even today with technologies like internet radio and the possibility of AM radio evolving to a 'digital' format, right now AM radio is still a major entity to educate and inform the USA public at large here in the modern era of 2022. Yes FM radio offers the listener an incredible noise free sound experience, however there is nothing like the efficiency and the ability of AM radio to pass along the critical daily information of our time. The preservation of these unique devices of our past is more important than ever.

Note: ZOOMER RADIO <https://www.zoomerradio.ca/> has the largest broadcast footprint in North America, with its rare 50,000-watt clear channel frequency that reaches extensive parts of Ontario, Quebec and 28 American states. It is the only AM channel still playing music in Canada's largest market, presenting pop classics from the 50's, 60's, 70's and 80's plus adult standards by today's top artists. Unique to the station are live from the ZoomerHall performances, broadcast live-to-air from the station's lobby studio. Health and lifestyle tips air four times daily. Weekends feature more than two dozen specialty programs.  
CFZM 740 AM/96.7 FM



## Profiles In Radio A Glimpse into FADA

The following is from the March 1966 issue of *Radio Electronics Magazine*. It is a brief biography of F. A. D. Andrea, the founder of the companies FADA and Andrea.

### Frank Andrea

Born in Italy, he was brought to the United States at the age of 18 months by his widowed mother. At 11 he had to leave school to go to work, but he spent his nights studying mathematics and drafting. He started a small radio parts business in 1918 and began to produce radio kits. One of the first designs licensed under the Hazeltine neutrodyne patent, his FADA radio was probably the best known of the neutrodyne receivers.

#### FRANK ANDREA DIES AT 77

F. A. D. Andrea, radio and TV pioneer who popularized the neutrodyne receiver in the '20's, died Dec. 22, 1965.



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He sold FADA in 1932 and retired, but started again in 1934 by founding the Andrea Radio Corp. That company sold the first TV kit in 1938, and is today a producer of high-quality television receivers.

He sold FADA in 1932 and retired, but started again in 1934 by founding the Andrea Radio Corp. That company sold the first TV kit in 1938, and is today a producer of high-quality television receivers.

NOTE: Andrea made radio TV phono consoles from about 1948 to 1958'. Andrea as a company is almost 90 years old now. In the 1960s, Andrea designed the intercom communication system used in the first manned Mercury space flight capsule, as well as military intercoms for helicopters and the F-16 fighter jet. NASA, defense, and OEM products were the focus of the company from the 1960s until 1998 when it went into digital array microphones and noise-reduction solutions, their current business.

For more history check out the about section of the Andrea website: <https://andreaelectronics.com/about/> The additional links below lead to nice, detailed articles and a video showing an early FADA crystal detector.

References:

[https://en.wikipedia.org/wiki/Andrea\\_Electronics](https://en.wikipedia.org/wiki/Andrea_Electronics) <https://andreaelectronics.com/>  
1. <http://www.tvhistory.tv/1946-49-ANDREA.htm>

Article used with permission: <https://worldradiohistory.com/Archive-Radio-Electronics/60s/1966/Radio-Electronics-1966-03.pdf> (page 4)

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