

ARCI NEWS

www.antique-radios.org

Affiliated AWA
Antique Wireless Association

Volume 41, Issue 1 February 2021

102

THE SATURDAY EVENING POST

January 15, 1927



The high meetness of the willing carries the teame; the deep deep teat the rhythm; a great specially a million and teater to

RCA has made radio not only greater—but simpler

The new Radiolas that are such remarkable Musical achievements are at the same time the simplest of musical instruments

EVERY RCA Radiola shows this trend toward simplicity—combined always with new achievements in performance.



Radiola 20—twenty times as selective as the ordinary antenna set. With performance and tone quality that challenge competitors at any price! With Radiotrons, \$115

Consider the eight tube super-heterodyne, Radiola 28. It is the culmination of tweaty years of radio development—a remarkable instrument of music and of radio. Yet is stands as a simple, charming piece of furniture, and captures the magic of distant music with the turn of a single control!

In the RCA Radiolas of today, single control has been tried and proved it is

ARCI LIVE ONLINE VIDEO MEETS

MONTHLY LIVE ONLINE MEETINGS CONTINUE Generally, 3rd Saturday of the Month 10AM – 12AM CENTRAL

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



Upcoming ARCI MEET SCHEDULE

SATURDAY, February 20, 2021, 10AM CT

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

 $\underline{https://zoom.us/meeting/register/tJIrceisrj4pGNxvPcfmRM_eMeCtNv27jeBD}$

March 20, 2021 April 17, 2021 May 15, 2021	10AM-11:30AM Virtual Meeting 10AM-11:30AM Virtual Meeting 10AM-11:30AM Virtual Meeting	LIVE ONLINE LIVE ONLINE LIVE ONLINE
June, 2021	Outdoor - TBD Combined Meet With 6-Meter Club of Chicago	TBD DuPage County Fairgrounds Wheaton, IL
August, 2021	RADIOFEST TBD	TBD Medinah Shriners-Addison, IL
October, 2021	Outdoor - TBD Business Mtg./Officer Election	TBD American Legion Hall Carol Stream, IL
December, 2021	Indoor - TBD Business Meeting	TBD American Legion Hall Carol Stream, IL

TABLE OF CONTENTS

PRESIDENT'S MESSAGE	.2
ARCI UPDATES 2021 Officer Election Results Email Blast survey Results	
ARCI NEWS	
ARCI ZONE Live Online Meetings on YouTube	.7 10
NEWS FROM THE HAMSHACK Remembering Vocaline	11
ARCI ONLINE RCA Radiola 1920 - 19271	12
HISTORY ZONE RCA's Nipper	
RADIO ZONE A Radio Cradle for your Bench	23
ADS & Classifieds	29
Clubbing Around	30
RENEWAL FORM	31



PRESIDENT'S MESSAGE

ARCI is thriving! With a successful officer election, a new YouTube channel, an increase in contact rate from the public, new members, and an ever-growing audience to the monthly ARCI live on-line meets, we are thriving.

The increase in public requests to the ARCI via phone and email for valuation, donation, repair, and commission sales may be attributed to people home bound that are cleaning out and fixing up. However, many of the contacts are also estate settlements. Higher end equipment offerings that result in commission sales have been a particular growth area. How it works; ARCI makes ready and markets valuable equipment for owners who choose to not market their gear directly. The arrangement is generally a 50/50 split of the net sale between ARCI and the owner. In most cases the owner has inherited the radio or audio gear and has no idea of value. It is important as individuals, and ARCI as a publicly supported organization (a registered IL non-profit), that we all act in an honest and ethical way with the best interest of all parties in mind. That being said, ARCI could easily have taken donations of high value equipment and just said "thank you". That is taking unfair advantage. Hence, we inform the owner of the item's market value. If they want ARCI to represent the item, we offer the commission approach. Recently we sold an Atwater Kent model 10. It required some minor reassembly and a thorough cleaning. The buyer and seller were both happy with the price, transaction, and their ARCI support. There are more great items in the pipeline, and you will see them first as a subscriber to the ARCI "email blasts".

New members are coming through our ARCI on-line meets. The meets are open to everyone. We have attendees and presenters from all over the country, things you might only see at a *Radiofest* or a personal visit to a private collection. Member benefits are threefold: Printed ARCI News (included and optional), vote in officer elections and, of most interest to many, the ability to sell at ARCI swap meets. Selling within a non-profit club requires membership by law, otherwise sales tax must be charged. *Radiofest* planning is underway in anticipation of public gatherings returning in 2021. The ability to hold *Radiofest* will still be determined by the state of Covid-19.

The election, ARCI live on-line meets, the new YouTube channel and more are discussed in articles later in this publication. Thanks to all of you that participated in the election. It was a record turnout!

Remember: a few dedicated volunteers make this whole thing happen. That is a huge burden on a few folks. Your dues are an obligation to get involved. To do all that is needed requires many hands and the more you are involved the more that can be done. We have needs in many areas and without volunteers they will not happen. Many tasks are backup to a primary person in order to spread the

load. To start becoming involved, consider writing an article or doing an on-line presentation. It is not hard, heck I can do it! Why not drop me a note at

Tom Kleinschmidt President. ARCI

ARCI UPDATE

ARCI 2021 OFFICERS - ELECTION RESULTS

This year's officer election was done electronically and by mail as we could not do a traditional in-person voice vote due to Covid-19. The ballot question:

Do you vote to elect this slate of candidates to be officers of ARCI for 2021? Vote Yes or No for entire slate.

President Tom Kleinschmidt

Vice President Jim Novak
Vice President Tom Zaczek
Treasurer Rudy Hecker

Secretary Open

RESULTS

Approximately 130 paid members were eligible to vote. As reported previously, membership is down by about 50% due to no in-person renewals as swap meets are canceled until the Corona Virus subsides.

Electronic balloting unintentionally allowed for duplicate votes. Each vote is associated with the member's email address. Duplicate votes (duplicate email addresses) totaled nine, all are the result of the reminder-to-vote sent out in late December 2020. There were three invalid votes: two with no email addresses and one from the clubinfo@antique-radios.org email address - that address does not represent an individual member. How the invalid votes occurred is unknown. They were all yes votes so they had no effect on the election outcome.

There were no duplicate paper ballots nor duplicate ballots between electronic and paper voting. All paper ballots submitted are valid.

About 45% of eligible members voted, this is many more than in a traditional voice election! All votes were "yes", there were no "no" votes. Here is the vote tally as of this writing:

Electronic ballot: 39 Yes 0 No Paper ballot: 22 Yes 0 No Totals: 61 Yes 0 No

HELP NEEDED

There are a couple of tasks that need someone to manage them. The two that are most urgent are: Club Secretary and Membership Secretary

Each of these jobs only involves a few hours or less a month. Your help in these tasks is genuinely appreciated.

CONCLUSION

Results were tallied by Tom Kleinschmidt. Data is available to anyone who wishes to request to see it.

Thanks to all of you who voted!

ARCI EMAIL BLAST SURVEY RESULTS

In early December we surveyed the roughly 600 ARCI email blast subscribers (via an email blast). 59 people, or about 10%, responded to the survey. This is typical for surveys. Question 7 is a request for input. There were requests for help on radio repairs and sales that we provided along with encouraging thank you messages and genuine appreciation for the information.

	Question 1: Do you like ARCI live on-line meet notices?	Question 2:Do you like to get Swap Meet notices?	Question 3: Do you like For Sale listings?
YES	56	59	57
No	2	0	0
Blank	1	0	2
	like Wanted items	Question 5: Do you like links to technical and historical topics?	want information
YES	54	55	44
No	2	2	11
Blank	3	2	4

Thank you all who took the time to respond! The results are below.

Question 7: What else would you like to see in ARCI emails?

Representative input from survey participants

- 1. Personal stories.
- 2. Listing of for sale items from the monthly zoom meetings. *Instituted thanks to this comment*
- 3. An estimate of how long on-line meetings will continue. ARCI live on-line meets are an additional offering started in July 2020, we plan to do it as long as people are interested.
- 4. When in-person swap meets might resume When COVID is over.

- 5. Where can I go to purchase radio components? Tri-State (local IL store) is gone, as is Radio Shack ... Fry's naked shelves. ... caps from Newark for 15 cents apiece ... \$8 for shipping. I hate to go begging for stuff by contacting friends. I really want to pick something off of a physical store shelf. Lack of DIY is killing our hobby. As a group we are here to support each other. Many of us have more parts than we can use in a lifetime.
- 6. Recognize the names of individuals who donated items to the club.
- 7. What about an occasional on-line auction?
- 8. I saw a video on adding an mp3 player to an old radio. I downloaded some old radio programs to my mp3 player and play them through an old radio, the volume and tone control from the old radio works with the mp3 player. I did this to three old radios so far. If you google " mp3 added to radio" and click on "video" you will go to a link and be shown how this is done.
- 9. Pictures of unusual radios.
- 10. Gentlemen, I do appreciate your efforts not only in promoting your club but sharing about other clubs and affairs in the radio hobby. This is the glue that holds the hobby together! Thanks again! *Thank you all for kind messages like this one*.
- 11. Raffles and contests
- 12. Info on interesting websites or YouTube findings.



ARCI NEWS

NEW! ARCI YOUTUBE CHANNEL

Now on YouTube! We've taken the plunge and created the *Antique Radio Club of Illinois YouTube channel*. We have posted the most recent four months of online meets so far.

You can find the channel at: Antique Radio Club of Illinois on YouTube

or

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

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

RADIOFEST 2021 PLANNING UPDATE

By Steve Muchow, Radiofest Chair

<u>RADIOFEST 2021</u> Friday, August 6 – Saturday, August 7

Since the previous update (in Dec 2020 ARCI NEWS), the Covid-19 situation in Illinois is still up in the air regarding a timetable to resume events such as *Radiofest*. In fact, a resurgence of the virus prompted the Governor to create "tiers" of additional metrics required to advance to the next "phase" of his multiphase "Restore Illinois" Order. Illinois is currently under a "Gubernatorial Disaster Proclamation" with Executive Orders defining county-specific mitigation metrics. According to the plan, Illinois must meet requirements in the final phase (Phase 5) before it is deemed safe to resume large events. On the positive side, a vaccine is now reaching Illinois. Hopefully, availability and coordinated logistics will allow a smooth delivery of the vaccine.

Clearly, COVID-19 has restricted our lifestyle and activities for nearly a year and there are still unanswered questions about this virus. However, we continue to emphasize that safety of our members and attendees is paramount and ARCI will wait until we can comply with relevant Phase 5 requirements and have been given the "green flag" by Illinois Authorities.

As mentioned above, we are planning to host *Radiofest 2021* on August 6th and 7th. ARCI has again reserved the beautiful Shriners Facility and the adjacent Hilton Garden Inn Hotel in Addison, Illinois.

Obviously, we are hoping that health conditions will improve and allow us to get together again to enjoy one of the best radio meets in the world. There are many decisions to be made well in advance of the *Radiofest* date, and we are continually monitoring the situation to determine what is needed to successfully "pull it off". As with everything, we can only influence aspects we can control. The virus and the government mandate will have the last word!

I highly encourage you to participate in ARCI's on-line live "ZOOM" meetings. The ARCI ONLINE Team is doing a super job and it's a great way to virtually get "back in the swing" with fellow collectors. Look for details on these meetings elsewhere in this issue of ARCI NEWS and in ARCI's email notices. Also, be sure to watch for *Radiofest* information on the ARCI web site (www.antique-radios.org).

If you have any comments or questions, please send them to me at smuchow@att.net.

For now, there are many worthwhile antique radio related videos from on-line sources such as ARCI, AWA and YOUTUBE to watch. If you find a particularly

interesting on-line video that members may enjoy, please let us know. Also, be sure to visit the new ARCI YouTube site!

Join ARCI for our monthly online meetings and continue to take advantage of this time at home to restore all of those radios that have been sitting on the shelf gathering dust. Hopefully, you can bring them to Radiofest 2021 and show them off or maybe even work out a swap in the large parking lot flea market.

ARCI ZONE

A Column on ARCI Special Items of Interest By Tom Zaczek

ARCI'S LIVE ONLINE MEETINGS NOW ON YOUTUBE

The Antique Radio Club of Illinois Live Online Meetings are now on YouTube to watch at your convenience! If you have been unable to attend the live on-line meetings you can NOW go to ARCI's new YouTube Channel to see these videos: https://www.youtube.com/channel/UCEyMw9QGrvcquC1vZBvHWbQ

If you can't click on the above link because you have a paper copy of this article, and you don't want to type in this long address, you can go to www.youtube.com and type "ARCI radio club" into the search box and these videos will pop up. Once you find them, be sure and "subscribe" to our new YouTube channel, and bookmark it so you can find it easily.

As I write this, we have placed the video recordings of the December 2020 and January 2021 meetings on this channel with more to come. Here's what you can view right now:

Meeting #6 Video, December 2020

- Tips and Tricks The "Dim Bulb" Tester Bill Cohn
- J. W. Miller "Transistall" AM Radio Steve Muchow
- The All American Five and the Challenge of Resistor Cord replacement David Kruh (NEVEC)
- The Radiola Presentation and Impressive Collection Charlie Wright
- Part 1 of the Radio Preservation Series Tom Kleinschmidt

Meeting #7 Video, January 2021

- Part 2 of the California CHRS Museum tour Steve Kushman, CHRS President
- A Real Estate Broker's First Radio "Restoration" (a Philoc cathedral) Jay
- DIY Power Supply for a Vintage Swan 250 (Part 1) Mike White
- Part 2 of the Radio Preservation Series Tom Kleinschmidt

As we go forward, we will be editing and posting the prior video meetings on this YouTube channel, so subscribe and stayed tuned to our channel!

A Bit About These Meetings

Since July of 2020, ARCI has had seven monthly meetings where we get together on-line and watch and discuss live presentations. All of these presentations have been enjoyable and informative. Since they are "live", we are able to interact with the presenter during the presentations and in the "open-session" at the end of the meeting. If you haven't done so yet, here is your chance to get together with fellow antique radio enthusiasts and learn about some things you may not know, and also pass along your knowledge as well. It has worked out great so far and thanks to all of you who have presented and participated!

We have had attendance and presentations from ARCI club members as well as from radio clubs from all over the country, usually 40 to 50 people per meeting. This is a truly nation-wide experience!

If you haven't joined in yet to be a part of these live meetings, the rest of this article will give you the details on how to join and participate, (even if you've never used a video application before!). I'll also cover the format of these meetings, how you can be a presenter, and what's coming up in the next meeting.

How to Join the Next Meeting

Step 1: Get the Zoom Application installed on your computer, tablet or smartphone.

We use the Zoom application to connect everyone for these online meetings. It needs to get installed on your device. This article does not cover that in detail, but you can go to Zoom.us to get the app and helpful information on how to install it. This site allows you to test your microphone and camera by using Zoom's "test meeting" before trying your first real meeting. Step 1 might be a simple thing for you, but if you have difficulty with this step, ask your kids or grand kids. They often use it for work or school. Alternatively, send us an email at *remote-events@antiqueradios. org.* Just don't wait until Saturday morning as we're all busy getting the Meet going.

Step 2: Get registered for the next meeting by clicking the link in the meeting invitation email.

Every month we send out several invitation emails for the upcoming meeting. If the club doesn't have your email address you will need to send it to *remote-events@antiqueradios.org*. (You do not have to be an ARCI member to be on this list.) After you click the link in the invitation and REGISTER, you will receive an email almost immediately back with the "meeting link". Save this email so when it's time to join the meeting all you have to do is click this link. Note that you can register as soon as you get the invitation, which can be many days ahead of the meeting.

Step 3: Join the meeting!

When meeting time rolls around you simply click the "meeting link" in the registration email that you received when you registered. Alternatively, you can also join by opening the Zoom App and entering the meeting number and password that are provided to you in that same email.

Meetings 'open' at 9:45 AM so we can all have 15 minutes to make sure we get connected online and that our audio and video are both working properly. Some folks prefer just to participate with their cameras off.

The Meeting Format

Introduction: The meetings start promptly at 10 AM. I serve as the moderator and give a brief introduction followed by the ground-rules for the presentations. Matt Pollack is at the controls and occasionally gives a brief tutorial on how to use the Zoom menus. At breaks in the meeting Matt will also send out pop-up polling questions to the participants.

Presentations: Each presenter is given a prearranged time, usually 10 minutes (including questions). We typically have 4 presentations each meeting. The presenter usually accepts questions from everyone during or just after the presentation. If more questions pop up later, we use the open session at the end of th meeting to finish up the discussion.

Show-and-Tell: At the last meeting we introduced this new section to the meeting and it was a great addition as several folks participated. If you don't want to make a longer presentation, here is your chance to join in and spend 3 minutes or so to quickly share something that you are working on or have found that is interesting. Let's hear from you!

Items For Sale...Items Wanted: In this section you can show items you want to sell or find. Tom Kleinschmidt moderates this section. We use the chat window feature of Zoom to show the particulars of the items and the contact information for the people involved. You can save the chat window information to a file on your computer so you can have the seller's contact information.

Open Session: When the above sections are done, it becomes an open discussion forum until 12 noon.

Note that we leave these last two sections out of the YouTube video.

How to Present at a Live Online Meeting

If you want to be a presenter, you can do it in a variety of ways. Remember- our goal for most presentations is to conclude them in 10 minutes, including questions and answers. Longer, special presentations are also welcomed. Contact us at <code>remote-events@antiqueradios.org</code> if you would like to do so.

Here are two suggestions:

 Have a prepared presentation or photos ready that you step through on your computer. Most of our presentations thus far have been done this way. You use Zoom's "share your desktop/screen" feature so everyone can see what's on your computer desktop. You can use whatever program you want. Microsoft *Power Point* and Mac's *Pages* are good candidates. You can also use any program that will put up text on your screen - like Microsoft *Word* - alternatively, you can just step through a bunch of photos on your computer.

2. A live walk through. Talk about your radio or related topic without any presentation files or photos. A live camera shot of the radio/equipment would be required so everyone can understand the topic clearly. It's a good idea to jot down some key points to use as cue cards so you can cover all the points you want to make in 10 minutes. Art Bilski's walk through presentations are a great example of this.

What's Coming Up In Future Meetings

We are very excited about the participation we've had in these meetings. Let us know your ideas and preferences. If you have any ideas for poll questions to be asked during the meeting please share them with us.

Here are the presentations we have scheduled for the next meeting on February 20th, which you won't want to miss:

- The Very Unique 1920's Electradyne Receiver Robert Lozier
- A Visit to Marconi's Cape Cod Site Edward Taicsich
- Part 2 of the DIY Power Supply for a Vintage Swan 250 Mike White
- Part 3 of the Radio Preservation Series Tom Kleinschmidt

Meeting Schedule

The schedule for the 2021 meetings is listed below, usually the third Saturday of the month from 10 AM to noon. (Dates are subject to change)

Saturday, February 20th
Saturday, April 17th
Saturday, June 12th
Saturday, August 21st
Saturday, October 16th
Saturday, November 20th

Saturday, December 18th

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*



NEWS FROM THE HAMSHACK

By Jim Novak, WA9FIH

REMEMBERING VOCALINE

Back in the mid-1950s, the Federal Communications Commission established several UHF Citizens' Radio services. Class A CB eventually became GMRS – General Mobile Radio Service – and still exists today, using two way FM mobile and handheld radios similar to those used by commercial and local governmental agencies. Class B CB allowed the use of low power: simple radios which were less expensive but had limited range. The Vocaline Company of America was established in Old Saybrook, CT in that era, and offered a line of Class B radios. They later went on to produce 27 MHz CB equipment when that band became available.

Vocaline's JRC-400 series radios used only three tubes: a 6AF4A served as both the transmit oscillator and superregenerative receive detector; a 6AV6 was the transmit speech amp and also receiver audio amplifier; and a 6AS6 was the modulator tube. The Model 400 was a mobile unit, operating from 6 VDC with a vibrator power supply, and sold for \$69.75. The Model 425, a base station, ran on 110 VAC and retailed for \$99.75.



Vocaline JRC-400

How did they perform? Well, they were advertised as short range units, several miles coverage in rural areas and perhaps a mile in urban environments. Several external ground plane antennas were also available to take the place of the radio's pull up whip, thus providing a bit better range.

My experience with the Vocalines resulted from a ham friend who lived about three blocks away – we had both earned our licenses in the early 1960's and talked regularly on the 6 Meter (50 MHz) band using AM equipment. Dan's mother had worked for a company whose owner had purchased a pair of Vocalines and was disappointed, to say the least, in their limited range. She saved the radios from the company's dumpster and he and I were able to get them retuned into the 430-450 MHz ham band through the kindness of a local ham who worked for Illinois Bell servicing their two way equipment. He had access to a frequency counter that accurately worked unto the UHF bands. Dan rigged up a vertical atop a ten foot pole in his back yard, and we were able to communicate fairly well if I took my unit

up into our attic, using the radio's pull up whip. Needless to say, we soon went back to conversing on the Six Meter band, and the Vocalines ended up on Dan's table at the next local hamfest.



Vocaline Radios

ARCI ONLINE RCA RADIOLA The Early Broadcast Era: 1920 - 1927

Companion article to ARCI Live Online Meet of December 19, 2020 by Charles Wright

Radio Corporation of America (RCA) was created by General Electric in 1919. RCA had several business functions: provide two-way radio communication (wireless telegraph), holder of radio patents, broadcaster and maker/distributer of home radios to receive AM broadcasts. This is a discussion of the early RCA broadcast receivers and the growth of the business.

The Business

The trade name "Radiola" was used by RCA exclusively until the 1930s and to some extent much later. RCA made a deal with Victor and Brunswick (phono mfg.) in 1925 to work together. In 1929, RCA & Victor merged, changing the name to RCA Victor and using the icon Nipper, the dog.

Broadcasting Begins

Early in 1921, RCA & Westinghouse wanted to jump into radio in the home. The problem was that RCA had patents on the triode tube, while Westinghouse held patents on Armstrong regeneration. GE backed off in fear of being sued. Solution: an agreement among RCA, Westinghouse & GE: RCA became the sole marketing organization; Westinghouse and GE will manufacture the sets.

The first commercial broadcast in Pittsburgh, PA by Westinghouse's KDKA was of the presidential election returns on November 2, 1920 and used a 100-Watt

transmitter. A few weeks later, power was raised to 500 Watts with scheduled programming. Radio announcers played music, sports, weather.... By the end of 1921, Westinghouse had three more stations: WJZ – Newark, NJ; WBZ – E. Springfield, MA; and KYW – Chicago, IL

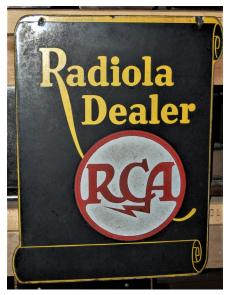
Growth was rapid. In March 1922 there were 138 stations on air. In March 1923 that number grew to 556. The broadcast infrastructure was in place.

Sales Grow

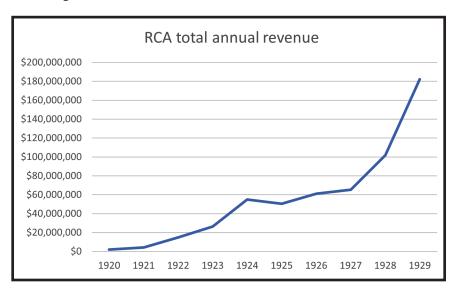
In June 1922 RCA printed its first radio catalog offering 15 models. Their distribution system consisted of 146 wholesale distributors, 196 warehouses, and 15,000 retail dealers - all identified by a two-sided metal Radiola sign.

RCA went from no radios in the home to selling over 20 different mass-produced sets, some in quantities well over 100,000, with dealers in every metro area nationwide.

RCA was THE tech stock to own at the end of the 1920s in the same way as *Microsoft* was in the 1990s. The share price soared to a high of \$115 in 1929 from a high of \$20 in 1927. The stock



Metal Dealer Sign



was pushed artificially high by an investor pool, yet their revenues reflected their large market share. RCA outbuilt and outsold all its competitors in the 1920s, they were the *Amazon* of radio makers.

The Products and Technology

RCA was innovating and implementing many new technologies in mass-produced radios: the superheterodyne circuit, screen-grid vacuum tubes, AC current vacuum tubes, light-socket power, an electrodynamic cone speaker, a portable radio with a docking station, and AVC (automatic volume control).

Independent engineer, Edwin H. Armstrong, approached RCA General Manager David Sarnoff and RCA Chairman Owen D. Young with a demonstration of his and Henry Houck's "second harmonic principle" superheterodyne receiver. The new design used fewer tubes and allowed for a built-in loop antenna and loudspeaker - making a complete radio receiver in one package. The original Levy superheterodyne patent had already been cross licensed in 1920 and 1921 among RCA, Westinghouse and AT&T. With no barriers to market superhets, the just booked \$5 million RCA line of radios for 1924 was then canceled and the line revamped. RCAs' superheterodyne radios were not the first to market; there were kits, plans in magazines and a few small makers such as Leutz but RCA sold the first commercially successful sets. RCA launched two superhet models in 1924 made by GE; the model R and Radiola Super-VII.

The model R. Superheterodyne (AR-812) cost \$220 and 164,000 were sold. The circuitry was hidden in a sealed metal box called a catacomb. It had a nice cabinet with space for batteries and cardboard disks for dials to mark stations.



Radiola Super het

The second model was a high-end set being RCA's first console radio: the Radiola Super-VIII (AR-810). It cost \$425 and less than 20,000 were made. It used the same superhet chassis as the AR-812 and was the first radio with two horn loudspeakers: a woofer and a tweeter, and an internal loop antenna rotated by a knob on the front panel. For a price comparison, a Ford Model T runabout automobile sold for \$265 in 1924. People that drove cars like Packards probably

bought these radios - their prices started at \$2,500!



Radiola VIII

Screen grid (tetrode/four element) tubes were developed in 1924 by DR. A. W. Hull of General Electric (GE). It is an improvement over the basic triode (three element) tubes enabling greater Radio Frequency (RF) signal amplification by reducing or eliminating unwanted regeneration (instability or oscillation). Technical specifics: The screen grid is placed between the control grid and plate as an electrostatic shield that does not materially restrict electron flow. The screen grid is operated at a positive voltage lower than the plate, with an external bypass capacitor to the cathode to filter unwanted high frequencies. The first tetrode tube was the UX222. It has a four-pin base with the screen grid connected to its grid cap for use in battery sets. And now in plain English: A tetrode can have greater amplification of radio signals and remain well behaved. It makes the signal bigger without making unwanted new signals that would interfere. The 1929-1930 line of radios used shield grid (Tetrode) tubes. The ones using UX222 tubes are the Radiola 21's (AR1258) and Radiola 22's (AR-1265).

AC Operated Tubes

These are tubes where the filament can be operated directly from a low voltage power transformer winding. Battery (DC) operated radios have directly heated tubes, the filament and cathode are one entity, like a UX201/01A tube. If a directly heated tube is used with AC on the filament, the 60 Hz AC line frequency would conduct through the tube and all that the radio would produce is hum from the speaker. With the advent of AC house light socket operation, which added an onboard power supply and eliminated the batteries, a new tube design was needed.

Enter the heater cathode tube. The filament was now surrounded by a metal sleeve but not connected to it. Heat radiates to the cathode from the sleeve. This is known as an indirect heater. They need a longer warm up time as there is a larger mass to heat and now a distance between the filament heat source and the object being heated. The second developed screen grid tetrode type UY224/24A by GE had the indirect heater to accommodate AC on its filament. The 1929 – 1930 lineup had Radiola 40 series TRF AC and Radiola 60 series superheterodyne AC sets, six models in all. The modern and much improved 60 series superhets were designed by engineering teams at GE under W. L. Carlson and at Westinghouse under George Beers. Shortly after, RCAs affiliation with GE and Westinghouse would be dismantled.

The electrodynamic speaker, invented in 1925 by Edward W. Kellogg and Chester W. Rice, uses an electromagnet to create the "DC" of fixed magnetic field for the speaker voice coil to "work" against. That is, for a speaker to work electrically it needs a fixed and steady magnetic field and a coil of wire connected to the cone (the voice coil) to make the cone move with the change in AC current being applied from the radio's amplifier. Technically, a speaker is an electric to acoustic transducer. The importance of this innovation is to create a stronger magnetic field that in turn will enable the speaker to handle more power and produce louder sounds. At the time, permanent magnet technology was limited, and the electromagnetic field solved the problem. Over time stronger permanent magnets were developed: alnico, ceramic and now rare earth magnets are used, so electrodynamic speakers are no longer required. Permanent magnets are less complex and cost less to make. The electrodynamic speaker was enabled by the transition to AC light socket power as a battery would drain very quickly powering the electromagnet/field coil in the speaker. The field coil does double duty in most AC sets as a choke in the power supply to filter the B+ voltage after it is rectified, but that is a discussion for another day.

The Radiola 26, a self-contained portable radio, had an optional battery box to dock to that held larger batteries for more play time when used in the home. The radio had contacts on the bottom that mated to contacts on the top of the battery box. This is the same principle that is used in laptop computer docking stations. The radio is a superhet using six UV199 tubes with a loop antenna that can be rotated with the front door open. It sold in 1925 for \$225, and approximately 20,000 were made.

In 1925, Harold Alden Wheeler invented an Automatic Volume Control (AVC) and obtained a patent. It is a feature that changes the amplification, or gain in the radio's audio stage based on the strength of the incoming signal. It partially compensates for weak or fading signals so that all stations have the same volume level. Later Automatic Gain Control (AGC) augmented AVC by controlling the gain of the RF amplifier after the antenna. AGC prevents strong signals from overloading the RF amplifier and distorting the signal. In radios like communication receivers, AVC and AGC are often used in tandem.



Radiola 26 and battery box

RCA's role in the mainstreaming of home radio is significant. This is just a taste of their impact.

To see the original presentation featuring many RCA models with descriptions of their features, go to the ARCI YouTube channel by clicking (468) ARCI - Online Meet 19 Dec 2020 - YouTube or search YouTube for Antique Radio Club of Illinois and play the December 19 on-line meet.

References

- 1. PBS program: *The American Experience*; Film: *The Crash of 1929*; 2004; American Experience | The Crash of 1929 | A Hot Stock; PBS
- 2. Book: Radiola: the Golden Age of RCA, 1919 -1929 / Eric P. Wenaas
- 3. Book: Radio Manufacturers of the 1920s, Vol. 3 RCA to Zenith; Alan Douglas
- 4. KDKA (AM) Wikipedia
- 5. Edwin Howard Armstrong Wikipedia
- 6. Ford Model T Wikipedia
- 7. Electrodynamic speaker driver Wikipedia
- 8. Electrodynamic Speakers SoundBridge
- 9. Automatic gain control Wikipedia
- 10. RCA dog: our famous Nipper & Chipper

Note on this issue's cover: Ads for the 1925 - 1927 line appeared in national magazines from October 1925 to late summer 1927 when the new line was introduced.



In 1899, Francis Barraud painted a picture of his brother's dog, "Nipper", listening intently to a windup Edison-Bell cylinder phonograph. The painting was called "Dog Watching and Listening to a Phonograph". The trademark was registered by Berliner Gramophone for use in the U.S. on July 10, 1900. In 1929, "His Master's Voice" trademark was acquired by the Radio Corporation of America. It was the first appearance of a RCA dog "mascot". In 1990, a puppy named "Chipper" was added to the RCA dog family.

Commonly identified as a fox terrier, "Nipper" was more probably a terrier mix, some think he was a Jack Russell Terrier. The name "Nipper" came about because of a trait of his puppyhood: his tendency to greet strangers by biting their legs.

Thinking commercially and noting that the dog was listening to an Edison Bell cylinder, Barraud wrote to the Edison Bell Company in New Jersey for them to use the painting in their advertisements. The representatives of the company unimaginatively failed to see how it could help sales and turned down his offer, since they believed that dogs don't listen to phonographs. Friends liked the painting and suggested to Barraud that he might make it more appealing by substituting a gold horn to replace the black Edison horn. Barraud liked the idea, so he visited Barry Owen, the manager of Liverpool's newly formed Gramophone Company, who understood the commercial possibilities. He offered to buy the painting and the rights to it if Barraud would make it a record gramophone instead of a cylinder phonograph, which Barraud did. A deal was made for both the painting and the copyright, and in October 1899 the deal was sealed when Barraud delivered the painting.

At first the Gramophone Company Ltd. of London used the image sparingly in England. Then Emile Berliner (1851-1928), the U.S. inventor of the gramophone, talked to Owen about assigning to him the U.S. rights to use the picture. Owen did so. In the U.S. Berliner was working with the Victor Talking Machine

HISTORY ZONE

An Occasional Column on Radio Related Items of Interest

BOOK REVIEW: THUNDERSTRUCK

By Maureen Blevins

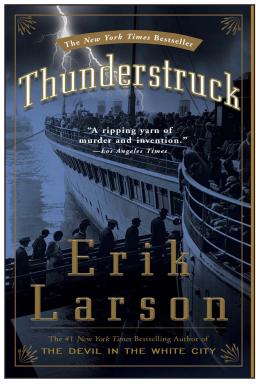
Title: Thunderstruck

Author: Erik Larson (2006)

From the back cover: A true story of love, murder, and the end of the world's "great hush."

In Thunderstruck, Erik Larson tells the interwoven stories of two men—Hawley Crippen, a very unlikely murderer, and Guglielmo Marconi, the obsessive creator of a seemingly supernatural means of communication - whose lives intersect during one of the greatest criminal chases of all time.

Set in Edwardian London and on the stormy coasts of Cornwall, Cape Cod, and Nova Scotia, Thunderstruck evokes the dynamism of those years



when great shipping companies competed to build the biggest, fastest ocean liners; scientific advances dazzled the public with visions of a world transformed; and the rich outdid one another with ostentatious displays of wealth. Against this background, Marconi races against incredible odds and relentless skepticism to perfect his invention: the wireless, a prime catalyst for the emergence of the world we know today. Meanwhile, Crippen, "the kindest of men," nearly commits the perfect murder.

With his unparalleled narrative skills, Erik Larson guides us through a relentlessly suspenseful chase over the waters of the North Atlantic. Along the way, he tells of a sad and tragic love affair that was described on the front pages of newspapers around the world, a chief inspector who found himself strangely sympathetic to the killer and his lover, and a driven and compelling inventor who transformed the way we communicate.

As with all of Erik Larson's books, I find myself wondering how many years of research he has to do before he can actually write the book. They are so full of facts, with quotes from letters and newspapers, and other publications the author has spent countless hours perusing. He seamlessly weaves several stories together into a coherent narrative that reads more like a novel than a mere recounting of actual events. I find myself following each thread avidly.

Since childhood Guglielmo Marconi was focused, obsessed really, with electricity. An obsession that continued his entire life. He conducted experiments, with increasing complexity, from the time he was a young boy. He had no formal schooling, and always admitted that he was not a scientist. Indeed he found the fact that it was he who made wireless telegraphy possible as much a surprise as everyone else did. Sadly, the same obsession that made him famous also caused personal relationships throughout his life to fall apart.

His mother indulged his passion for experimentation and she also tutored him, teaching him perfect English which allowed his native Italian to go quite ignored.



A vintage postcard showing the Marconi Wireless transmitting building at South Wellfleet, MA, and the first 20 antenna masts erected - and destroyed in 1903. Each is 150 ft in height.

It was not a compliment that his later teachers called him Little Englishman". "The She also taught him piano, which cultivated in him a love for Chopin, Beethoven and Schubert. He also had a gift for reading music and mentally transposing from one key to another. The main reason he was kept out of formal schools was his mother's dislike for the Catholic Church. It was the Jesuits who ran the best schools and she did not trust them.

The book details some of this background, and also touches on the origins and early progress of electricity. It gives detailed narrative on Marconi's attempts at increasing the distance he could transmit wirelessly, with coherers, tuners, hertz waves, and other technical terms that will no doubt be of interest to many of you,



Marconi watching associates raising the kite (a "Levitor" by B.F.S. Baden-Powell) used to lift the antenna at St. John's, Newfoundland, December 1901.

particularly I would think, to those who like to work on the electrical components of your radios.

It also details his rivals, his triumphs and his failures in his quest to be the first to transmit wirelessly over great distances, and eventually, across the Atlantic Ocean. It is a fascinating story with intrigue and betrayal. Oliver Lodge was one of his biggest rivals. Lodge may very well have beaten Marconi to the goal had he been as dedicated as Marconi was but he had a history of being distracted, by one thing and another, most notably by Spiritualism, which at this time was gaining followers around the globe. Whether or not he was convinced that communication between the living and the deceased was possible, or if he wanted to debunk the fraudulent, he spent a great deal of time pursuing this fascination rather than trying to solve the mystery of wireless transmission.

Marconi, at the age of 23 became famous for his efforts, and quite wealthy. He had a head for business, starting his own company, fully intending to monopolize the wireless market. He also spent larger and larger sums on making his transmitters ever bigger and more powerful. He received the Nobel Prize for Physics in 1909, along with Ferdinand Braun, "in recognition of their contributions to the development of wireless telegraphy." He was 35. Upon receiving the award, he frankly admitted that he still did not fully understand why he was able to transmit across the ocean, only that he could and acknowledged that many mysteries still remained. In 1933 Marconi visited Chicago and the Century of Progress where he was honored for his contributions to the field of wireless.

As for the story of the murderer that runs concurrently with Marconi's life, it too is a fascinating tale. It is the story of one Hawley Harvey Crippen and his wife Cora, who wanted nothing more than to become famous as a singer, changing her name to Belle Elmore. Unfortunately, from all accounts, she had absolutely no talent.

Crippen was a timid man, and Cora the exact opposite. He loved her, indulging her with singing lessons, jewels, furs, and clothes. Increasingly, over time, she belittled him more and more, flaunting the attentions she received from other men.

Crippen eventually fell in love with another young woman who became his mistress, but yearned to become his legal wife.

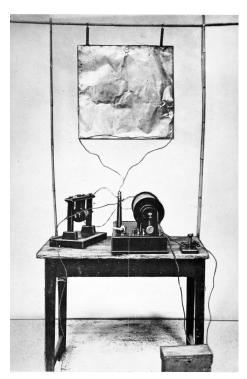
The point at which their stories intersect is somewhere that neither Crippen nor Marconi would ever have imagined.

NOTE: If you'd like to read more on Marconi, Larson mentions several books that were invaluable to him in his notes in the back of the book. There is also a website: MarconiCalling. It however is no longer updated but some of the links are still working and some information can be found there and in their archives.

Other books by this author: Devil In The White City, Isaac's Storm, Dead Wake, In The Garden of Beasts, The Splendid and the Vile.



"Marconi is a good fellow. Let him continue. He is using 17 of my patents."
-Nikola Tesla



Marconi's first radio transmitter



Guglielmo Marconi

RADIO PATENT GRANTED TO GUGLIELMO MARCONI

Date: June 2nd 1896 Name: Guglielmo Marconi Occupation: Radio Inventor Location: England

RADIO ZONE

An Occasional Column on Radio Related Items of Interest

A Radio Cradle for Your Bench

By Tom Zaczek, ARCI Member

Some of you may ask: What's a radio cradle? A radio cradle is simply a "chassis holding fixture" so you can work on your radio chassis without having to worry about it moving or tipping and breaking something.

This article describes a radio cradle that I designed and built recently. It's a very simple, strong design with a lot of useful features that can help you with your radio chassis restorations.

I must confess, I have been restoring radios for a long time and have not had one of these before. I have always used something "about the right size" on my workbench or I stacked up pieces of wood to help position the radio chassis as I worked on it. There have been many times where I've damaged something as the chassis slipped or tipped over. Painful images of a phenolic coil cracking, a flimsy metal piece bending, or my finger going thru a speaker cone come to mind. Ouch! I really didn't know how much I needed one of these until I built this and put it to use. This cradle is now one of the most useful tools on my radio restoring workbench. I can relax and work on my chassis with no worries about breaking something like that. If you don't have a cradle, after you read this, I hope you will see the benefits of this cradle design and perhaps be inspired to build - or buy² - your own!

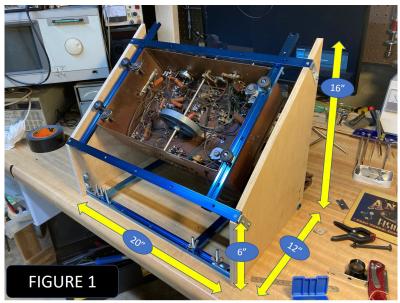


Figure 1 shows the cradle holding a tall Zenith 6S-341 chairside radio chassis on my workbench. The cradle is made from 2 identically sized pieces of ½" plywood and a number of special aluminum extrusion rails that are designed to allow the heads of T-bolts to slide around within them for adjustability. You can see some of the T-bolts with wing-nuts on them sticking up from the bottom-front extrusion rail in the photo. The dimensions of this cradle will accommodate a large variety of radio chassis sizes up to 20 inches wide without taking up a huge footprint on the workbench. If you need it to hold a wider chassis, you just need to undo the wing-nuts, remove the sides, and reassemble using 4 longer extrusions.

How the chassis attaches to the cradle

Figure 2 shows how the radio chassis attaches to the cradle at the circled areas. One key feature is that it always uses the radio's chassis mounting screws and chassis holes to attach to the cradle. It's just a matter of sliding the front-to-back extrusion rail pieces either left or right to fit the width of the chassis, then sliding and angling the flat steel mounting plates to line up with the chassis mounting holes. Tighten up the knob nuts and wing nuts on the T-bolts on the cradle, then install the chassis mounting screws through the flat plates and you are ready to restore!

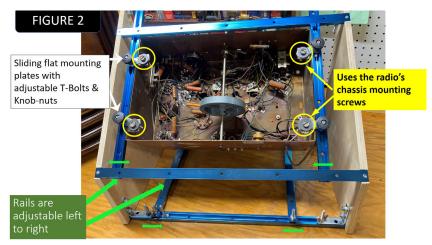
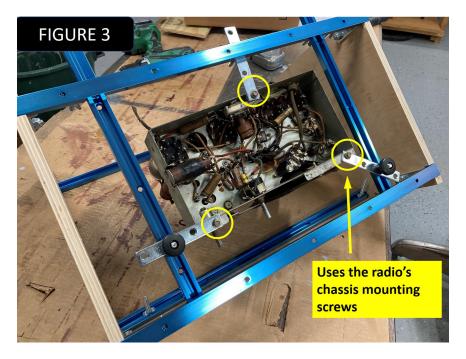


Figure 3 shows an example of a smaller, shorter chassis installed in the cradle, and it's a case where there are only 3 chassis mounting holes with one in the center of the chassis at its rear. In this case, some longer flat mounting plates are used and a T-bolt in the top extrusion rail is used as well as the 2 side rails to mount the chassis. This adjustable arrangement is very flexible and can be adapted to just about any mounting hole pattern.

In addition, there are extra T-bolts installed in these rails so that you can attach other elements of the radio to the cradle that might not be part of the chassis, such as the speaker or antenna. You can also help route test leads or scope probes to keep them out of the way or mount other accessories like a small LED work light using these extra T-bolts.



Two different chassis underside orientations possible

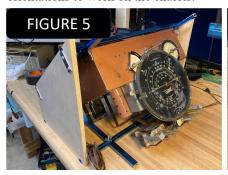
Figure 4 shows that the cradle can be flipped over to provide for 2 different orientations to work on the underside of your radio chassis. The orientation on the left is for a taller chassis, giving the most clearance from the top of the chassis to the benchtop. On the right is the "shorter chassis" orientation, providing the least clearance. In addition to this height difference, each orientation is at a slightly different angle to the bench top, and has a different closeness to the front of the workbench.



Most smaller radios will fit into either orientation. One orientation may feel more comfortable to work with as you get in there with your tools and instruments as you work on the radio.

It's easy to flip the whole cradle over and onto its sides

The outside surfaces of the cradle are mainly flat so its easy to flip the whole cradle over and onto its sides to work on the top of the radio. Figure 5 shows the Zenith chassis in the up and down orientations. The cradle protects the flimsy tuning push-button shafts located above the dial face from hitting the benchtop. In addition, the cradle can be set on its left or right side to provide for two more orientations to work on the chassis.





Some Design Detail and Materials Used

In this section I'll describe the materials I used in this cradle and give you some hyperlinks to help find them on the web in case you want to build one like this. It's not intended to be detailed construction plans but just a launching point if you want to build your own.

Figure 6 shows the cradle with the side removed. The front-to-back chassis mounting rails are not installed (or drilled) yet and are shown on the bench in front. The dimensions of the ½ inch plywood pieces are shown back in Figure 1. The four side-to-side extrusion rails are 20" long and the four front-to-back rails are 16" long. I started with four 36" extrusion rails and cut them to get these 8 pieces. In addition to being a very cool blue anodized color, these extrusion rails







FIGURE 6

are very strong. My 15-pound Zenith chassis didn't cause any bending at all in these 20" rails. You could go a lot wider if you need to fit some of those long 1920's era chassis.

I bought these extrusion rails and T-bolts on-line from POWERTEC in Waukegan IL. https://powertecproducts.com (SKU: 71372). Home Depot also carries these.

Attaching the side-to-side rails

Figure 6 also shows that the four 20" side-to-side rails are attached to the plywood using eight each of a 2" steel inside-corner brace (Ace Hardware SKU 5290127). The plywood is notched where each rail meets with it. The notching allows the cradle to sit flush on the benchtop on the wood sides and gives it a little more rigidity. One side of each corner brace is attached to the plywood in a permanent fashion using the provided wood screws or ¼-20 flat-head machine screws and nuts. Figures 4 and 5 show that I used both methods. I used the two different methods as I was trying to maximize the left to right clearance of the top rails (Fig 6) to accommodate the widest chassis possible with a 20-inch rail.

The pre-drilled holes in the corner braces are the right size for the ½-20 T-bolts, and the braces can be used as-is for the bottom rail attachment (Fig 6). For the top rails, to maximize the cradle usable width, I modified the top braces (Fig 6 inset). I cut the brace and used the bench grinder to reduce its width so that it would slide inside the extrusion rail. I then drilled holes in the top rail and modified brace, tapped the brace hole and used a machine screw to secure them together.

You could simplify things by not notching the wood, and just attaching all 8 unmodified brackets the same way with the provided wood screws, and you would have a very usable cradle.



Attaching the front-to-back rails

The front-to-back extrusion rails are the ones that the radio chassis gets mounted to. You only need 2 of these rails in a minimal cradle configuration. I used 4 16" long rails for maximum versatility.

Figure 7 shows how the front-to-back rail is attached to the underside of the side-to-side rails. You drill a ½ inch hole in the front- to back rail in two spots and use T-bolts and wing nuts to attach the rail. No drilling is required in the side-to-side rails.

Other Material

In addition to the rails and corner brace hardware, you will need some flat steel brackets, T-bolts, and wing nuts. The flat brackets are used to mount to the radio chassis using the radio's chassis mounting screws. You might need some right-angle brackets if the radio chassis has a mounting hole on its side instead of its bottom. I also used some knob-nuts which are a nice upgrade from wing-nuts.

- Flat-steel Brackets (Mending Brace 4-pack: Ace Hardware SKU 5292172)
- T-Bolts (1/4-20, 1-1/2" Long 20 pack: POWERTEC SKU QTB1008)shorter will work too
- Kit of knob-nuts, T-bolts and brackets: POWERTEC SKU 71335
- Wing-nuts- 1/4-20 thread

Summary

By using plywood and some easily available hardware, and doing a little carpentry and hacksawing, a very useful radio cradle has been described and shown. With a cradle like this, you can "baby" your radios and protect them from harm as you restore them.

Acknowledgments

I'd like to thank Larry Snyder for his excellent article¹ on his radio cradle that appeared in the Colorado Radio Club's newsletter a few years ago. I consulted with him on his cradle and that served as an inspiration for my design. Larry also pointed out the commercially available cradles from Strong's Radio Stands²

References

- 1) Cradles to Aid Radio Repair Larry Snyder *The Flash*, Volume 29 Issue 5 NOV/DEC 2018 - The Colorado Radio Collectors Antique Radio Club Newsletter link to pdf: http://coloradoradiocollectors.com/CRC/images/crc flash/2018/Flash%20Vol%2029-5.pdf
- 2) Strong's Radio Stands: http://radiostands.com/

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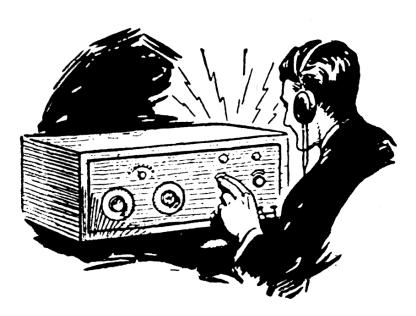
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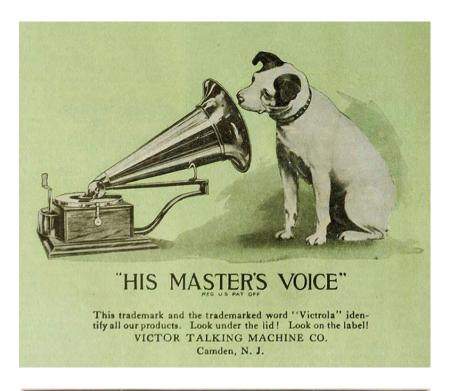
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