

Thomas Edison

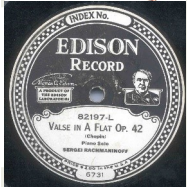
○ # 08

○ Vol-23

○ 2018



Early Edison cylinder recorder-player



S. Rachmaninoff playing piano for Edison records



NEW MEXICO

RADIO  
COLLECTORS CLUB

## Next NM RCC Meeting August 12th Wild Card Sunday

*The phonograph is a device for the mechanical recording and reproduction of sound. In its later forms, it is also called a gramophone, or, since the 1940s, a record player. The sound vibration waveforms are recorded as corresponding physical deviations of a spiral groove engraved, etched, incised, or impressed into the surface of a rotating cylinder or disc, called a "record" or "vinyl". To recreate the sound, the surface is similarly rotated while a playback stylus traces the groove. Borrowed from the internet*

### The Edison Company's 1929 C2 Radio & Phonograph by Richard Majestic

The Edison company purchased the Splitdorf Radio Company in 1929 and Charles Edison was elected president. Edison wanted to get into the radio business and continue to produce and sell the Diamond disc records, which had vertical modulation and played at 80 RPM. For the radio they needed the RCA and Hazeltine patent licenses to legally produce Tuned Radio Frequency (TRF) radios. They planned to build radios to make money as their record business was losing money but the radios would have electric phonographs and the ability to play both lateral and vertical modulation records at 78 and 80 RPM.

I had an opportunity to restore an Edison C2 this month and it had two very interesting design innovations; the phonograph pickup transducer could play both lateral and vertical record groove modulation. The lateral transducer was the common variable reluctance type transducer, that used the common steel needle that moved an iron vane in the magnetic field with the pickup coil in the magnetic path. The vertical modulation used a short arm off to the left and perpendicular to the record grooves from the steel needle receiving hole. The short arm is about 1/4" long with a diamond stylus mounted at the end of the arm. The vertical motions

is now turned into lateral motion in the magnetic circuit. Please check the pictures and description boxes.

The second innovation was the Peerless speaker's voice coil (VC) and audio output transformer. The Peerless speaker looks like a common field coil 12" speaker, but the voice coil has only one turn, made from copper sheet about 1/2" wide, about 1" in diameter wound onto the paper VC former and in the magnetic field gap. The VC is then connected to two flat copper strips that connect the VC to the single turn secondary winding of the output transformer. The two copper connecting strips serve two purposes; one it connects the output voltage from the one turn winding of the output transformer to the VC and they flex with the VC, to keep the VC centered in the magnetic field gap both vertically and horizontally. The one turn secondary of the output transformer, is made for very high audio current and very low voltage. The copper secondary winding is copper, 1/4" thick and 1 1/2" wide. I'm sure Mr. Jensen had a good laugh over this design and the cost of manufacturing it. You'll notice that the output transformer is also a toroid with an air gap at each end of the core that passes through the single turn secondary. The air

*(Continued on page Four)*



1929 Edison model C4 with radio and phonograph, Sales price \$325 (less tubes)

# The NMRCC Report: Meeting July 8th 2018

The pre-meeting auction had some interesting radios along with boxes of miscellaneous parts and a couple of tube lots. The meeting was called to order at 1:30 by Club President David Wilson. There were 13 members present and a visitor Dave Siler who had heard about the club through an announcement made by club member Les Davison on KKOB 770 radio station. We also had another visitor which was a noisy cricket.

We did our usual 2-minute round robin. Chuck Burch has been restricted by knee injuries but is continuing his ever ending effort to clean up his garage workshop. Ray Trujillo is doing spring cleaning even though it is summer. Les Davison fixed a Philco 46-480 AM/FM/Phono radio for a customer. At recent yard sales, he picked up a Kelsey mixer and a Panasonic AS-5500 stereo receiver. Tony Levitino is moving to Arizona. Former Arizona resident Mark Toppo gave 10 top reasons for living in Arizona or were they 10 reasons for NOT living in Arizona. John Estock has been repairing power supplies to sell on eBay. Dave Siler discussed his American Bosh beautiful cabinet that someone has insert an incorrect chassis. Richard Majestic is repairing an Edison C2 radio that has a record player that plays vertical and horizontal modulation recordings. Rick Harris has been cleaning out a storage shed. David Wilson is building a reproduction of a Bixby guitar from scratch. Mark Toppo has been working on the Aristocrat radio/45 RPM record player that he bought at last month's club auction. It can hold up to 15 records and you can indicate how many of the records are to be played. After the records are played, they are lifted back up and the radio is turned on. There are separate volume controls for the radio and the record player.

The monthly theme was store-branded radios. Chuck Burch brought in his Air Castle AM/SW radio he calls Smokey. Air Castle was a store brand of the Spiegel company. It was given to him by a co-worker who said the radio had been in 2 separate house fires. Chuck used Howard Restorer to bring back the original finish. The chassis still has black smoke damage but works just fine. Don Menning brought in a variety of transistor radios. Transistor radios were very expensive when they first became commercially available. Over time, they became very cheap, and sometime very desirable sets were given to kids who damaged them. Some of the early sets had weird batteries that are difficult to get today. Mark Toppo brought in his pristine Silvertone 1938 model 6120 which has an Ingraham inspired cabinet. It is all original, but he did a minor face lift of the finish. David Wilson brought in a Goodyear branded tube car radio which was mounted on the firewall of a car with cables connecting to a head that had tuning and volume control knobs. David's family were GM car dealers who also sold Goodyear tires. He also brought in a new small wooden case radio

with a leather storage case. Despite its small size, it sounded great. The radio was sold as part of a fundraiser for the pirate Radio Caroline project. The voting for Best-of-Show was tight, but Chuck Burch's Smokey was selected as winner.

On new business, the club donation to Quelab was discussed. Quelab's insurance dictates that a Quelab member must be present for outsiders to be allowed in the building. This has been an occasional issue with early birds to NMRCC meetings getting access to the meeting room until one of NMRCC members arrives who is also a Quelab member. This could be a big issue if all the joint NMRCC/Quelab members did not attend a given NMRCC meeting. Chuck Burch suggested that as part of our donation, we approach Quelab about having whoever is running the NMRCC meeting that month be designated a Quelab member for the duration of the meeting and be given the building access code for that month. Don Menning, a member and on the BOD said he would discuss it with Quelab officers.

On old business, the NMRCC tailgate sales at the Duke City Hamfest being held September 21-23 at Isleta Casino was discussed. A tax number is required for anyone having a booth inside the building, so this eliminates us having an inside table. We discussed having 2 tables at the outdoor tailgate area. Rick Harris was going to see about reserving two tailgate spaces, but their location will be on a first-come basis the morning of the tailgate. Les Davison thought he might be able to reserve the spaces next to him when he arrives to set up his tailgate table. The possibility of borrowing tables from Quelab was discussed. The club used to have a tent, but where? We discussed possibly buying another tent, but Don Menning said he had one that the club could borrow.

Richard Majestic discussed the status of the club installing a memorial plaque for radio pioneer Ralph Goddard on the New Mexico State University campus. Apparently, personnel have changed at NMSU, and the person Richard was talking to has a different job now.

Mark Toppo discussed plans for NMRCC appearing on the New Mexico Living TV Show. Current plans are for the show to be done in August or September.

Our Fall picnic plans were discussed with various options of including visiting the War Eagle Museum in Santa Teresa. It was decided that we would meet on Saturday Oct 13th at the museum at 11:00 with the club paying for admission and afterwards we would go to a nearby steak house where the club would pay for lunch. (Mark Toppo made the motion, Don Menning

## NMRCC 2018 MEETING DATES

**January 14th** Old loudspeakers and microphones  
**February 11th** Pre-1930 radios  
**March 11th** Early FM Stereo receivers, amplifiers, and other vintage audio equipment  
**April 15th** Homebuilt crystal, tube, and transistor sets  
**May 20th** National Museum of Nuclear Science & History  
**June 10th** Atwater Kent tube radio sets  
**July 8th** Store-branded radio sets (Airline, Trutone, Airchief, Silvertone and etc  
**August 12th** Wild Card Sunday  
**September 9th** One-tube radios  
**October 13th** War Eagles Aviation Museum and lunch at GALC Steak House  
**November 11th** Old test equipment, tube testers, RF signal generators, oscilloscopes, bridges, meters and etc  
**December 9th** Holiday Party

seconded it, and the club voted to approve it).

Richard Majestic reported he needs newsletter articles. We have a new printer and mailer for the newsletter, and the newsletter will now be printed in color.

Don Menning is working on launching a solar balloon in early 2019 and needs a Ham to work with him to legally install a transmitter in it so he can track its path.

~Cuck Burch, Secretary/Auctioneer

## NMRCC Officers for 2018

- *David Wilson: President*
- *Mark Toppo: Vice President*
- *Richard Majestic: Treasurer*
- *Secretary: Chuck Burch*
- *Membership: John Anthes*
- *Ron Monty Director*
- *Ray Trujillo Director*
- *Open - Director*
- *Richard Majestic: Newsletter Editor (President pro-tem)*



## The President's Column



I hope everyone's summer is going well. I truly appreciate everyone's participation in the club's various activities and events; it makes the club great! In 2018 we have seen many new members come into our club and I encourage them to participate in the Annual Swap Meet at Duke City Hamfest on September 21-23 at Isleta Casino. It's a great way to sell some of your overspill radio items and it's a great way to pick up radios, tubes and other parts. The club has reserved two tables at this year's Hamfest swap meet, so we will be looking for members to volunteer to help us man these tables. Helping with this event is a great opportunity for our new members to get involved in new club activities.

Another opportunity for our new members is to join us in Las Cruces for the fall club picnic where we will be touring the War Eagles Aviation Museum. This is one event you will not want to miss. New Mexico is fortunate enough to have one of the largest private collection vintage aircraft museums in the U.S. with over 70 vintage war birds like P-51 Mustangs, a P-38 lightning, a Russian MiG and even a super rare WWII Russian Tupolev bomber. There are many rare automobiles as well as vintage aviation trainer radar and radio gear. We will also be eating at the famous Great American Land & Cattle Steak House. After lunch Richard Majestic and I will be holding open houses for members to see what's new in our radio collections. I hope everyone can participate in these great club activities! The fall picnic this year will be on Saturday, October 13th. So, mark your calendars and please help the club by volunteering for the Hamfest swap meet in September.

~David Wilson, President





# The Edison Company's 1929 C2 Radio & Phonograph by Richard Majestic

*(Continued from page One)*

gap reduces the bass response significantly and all the copper mass on the VC reduces the high frequency response. It's not a high compliance high fidelity loud speaker but it does sound very much like the acoustical Victor Orthophonic Victrola. The single output tube is a 50 triode which with 300 VDC on the plate and with cathode bias might produce 3 Watts of audio. One other comment; the early TRF radios made in 1924 to 1929 all used triodes, 4 or 5 tubes being common in the late '20s but a few radio makers, like Grigsby-Grunow Majestic and this Edison switched to using three tetrodes or screen grid tubes to get the equivalent RF gain while still using Neutrodyne design.

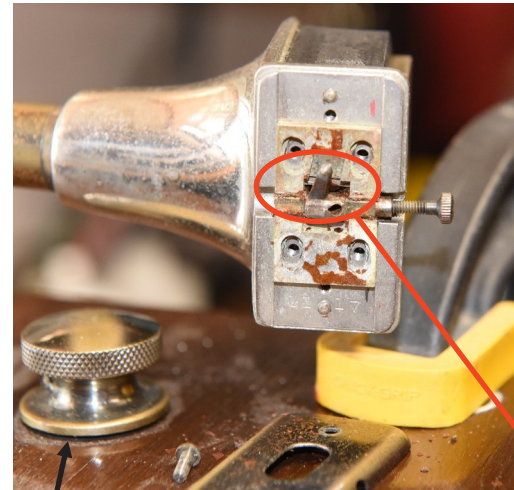
During this early period Edison Company made many models of the TRF radios, R1, R2, R3, R4, R5, C2 and C4, some with the electric phonograph, some just the radio. Why they were called Light-O-Matic is a mystery to me. The four models used two basic chassis designs, the C1 and C2 are probably the Splitdorf design and the "R" models, the Edison Company re-design. The C2 used separate filament and high voltage transformers in the same chassis as the TRF radio, 81 half-wave power supply rectifier and 50 triode power amplifier, the 12" Peerless loud speaker was separate. The R4, R5 and C4 used a separate receiver chassis and separate power supply amplifier chassis with the loudspeaker mounted on it. It also used two 45 triode output tubes in push-pull, and receiver chassis used four 27 triodes RF amplifiers, 27 detector and some models used four 71 triodes in push-pull parallel.

Thank you to NMRCC club member Don Henry for providing the Edison C2 radio.

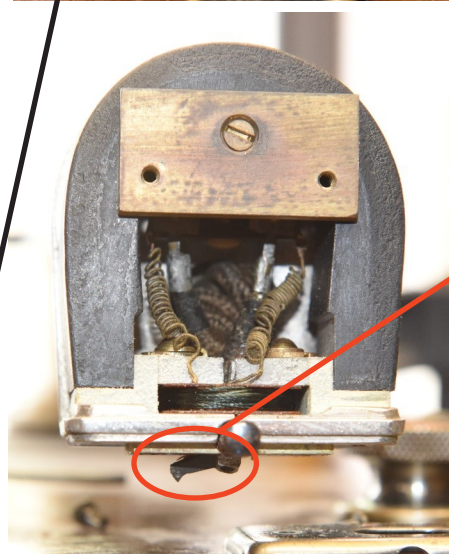
~Richard Majestic

The phonograph Volume control

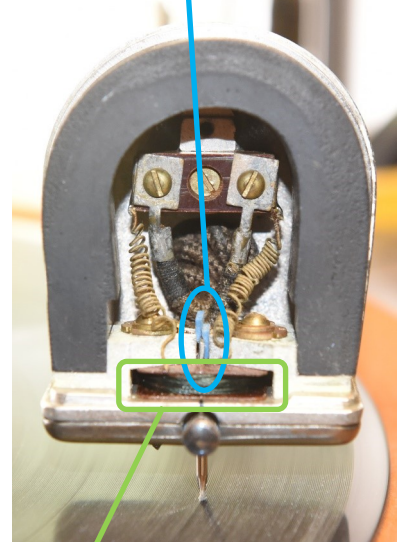
The Edison playback head with a new steel needle playing a 78 RPM lateral modulated groove disc. The horse-shoe magnet is under the cover that needs to be re-plated.



In the red ellipse is the diamond needle and arm for playing Edison Diamond Disc records which are vertically modulated recordings. The short arm converts the diamond up-down motion into lateral motion, moving the iron vane in the magnetic field gap left and right varying the magnetic field in the coil mounted below the vane and in the gap to produce an electrical voltage.



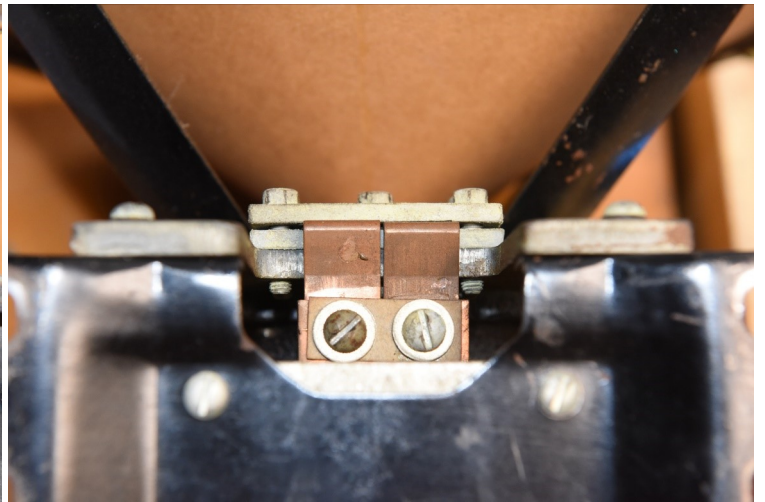
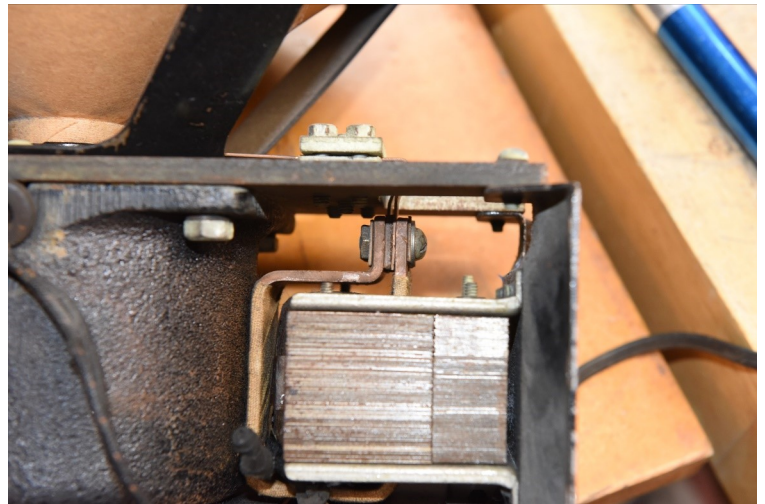
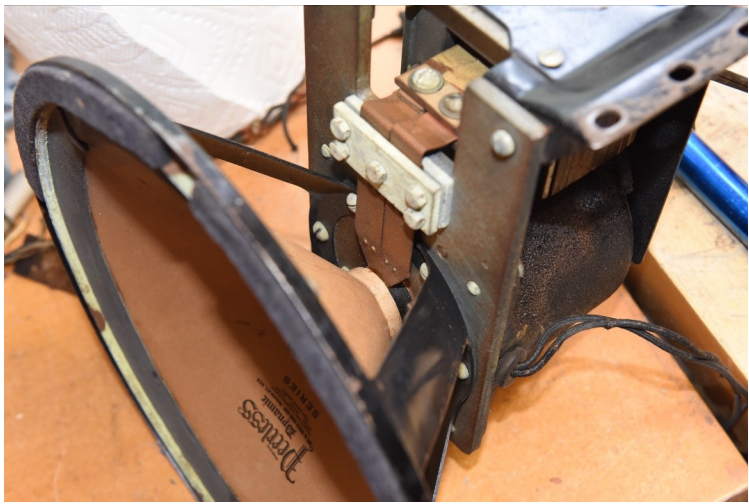
The iron vane with some damping and centering material being installed



The electric producing coil



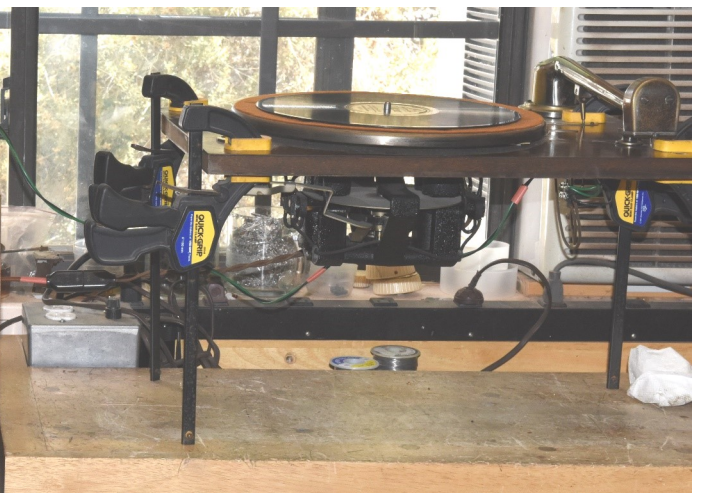
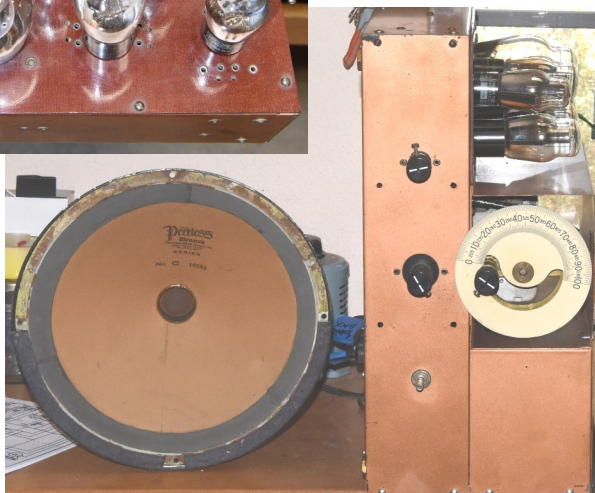
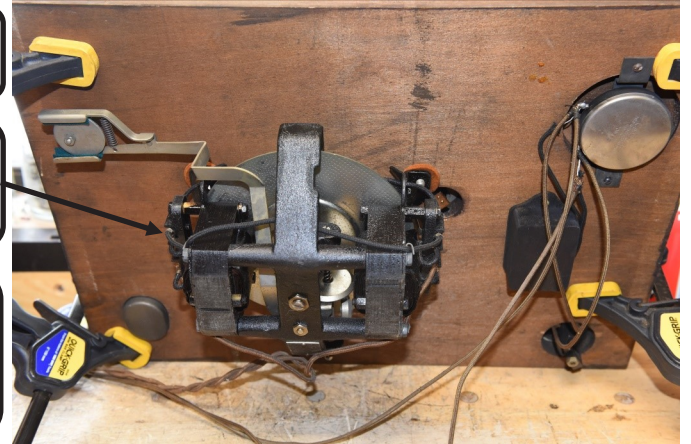




81 rectifier and replacement power filter

Induction (eddy current) motor with mechanical brake governor.

4-tuned cks, 3-26 TRF amplifiers, 27 detector, 27 audio driver and 50 output tube.





# EDISON

LIGHT-O-MATIC

# RADIO



*Model R-5, above. Pure in tone—and powerful. Constant gain Edison-neutrodyne circuit, employing five '27 tubes, two '45 power tubes and one '80 tube. Cabinet is finished in walnut with matched butt walnut pilasters. \$175 (less tubes)\*. Also available for DC operation.*

*Model R-4, below. The same efficient circuit as the R-5, housed in a more massive cabinet. Blended walnut finish, with quarter-matched sliding doors and raised butt walnut panels. Appearance is enhanced by carved moldings and ornaments. \$215 (less tubes)\*. Also available for DC operation.*



*Model C-4, below. Radio and Phonograph Combination. Plays all makes of needle records with the same radio-realism that characterizes the Edison Radio. Same radio circuit as Models R-4 and R-5. A cabinet in walnut finish of impressive beauty. \$325 (less tubes)\*.*



*\* Prices slightly higher in the far West.*

**T**WO years of Edison Radio, backed by more than a half century of electrical and acoustic research in the Edison Laboratories! Two years that are merely an index to what the name Edison means to the radio future.

In spite of the price wars, the over-production and the general frenzied chaos with which the industry has been beset, the Edison has forged dramatically

forward. It has proved itself as great as the name it bears. It has won the confidence of the public and of the radio dealer... confidence built on the greatness of the Edison name... on the superbness of the Edison Radio... on the stability of the Edison line. It is the kind of confidence out of which grow business and profits for radio dealers.

DESIGNED AND BUILT IN THE LABORATORIES OF *Thomas A. Edison*, ORANGE, N. J.

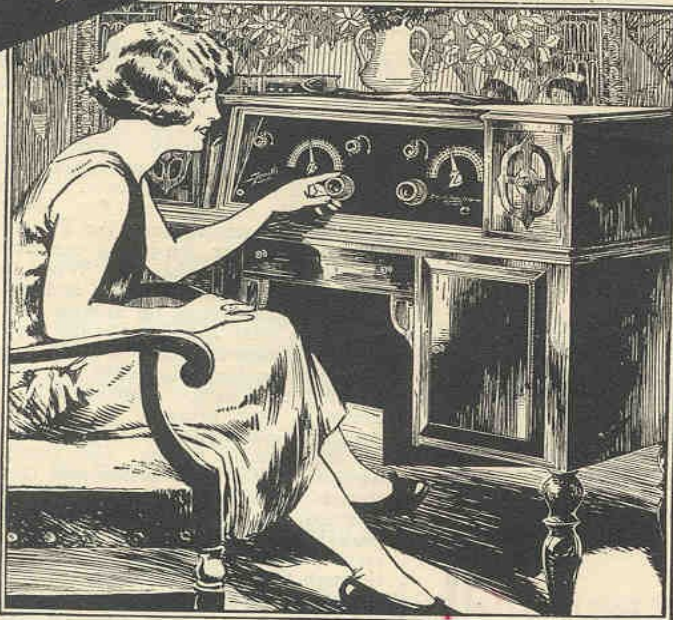


# ZENITH

TRADE MARK REG.

## RADIO

→ LONG DISTANCE ←  
TRADE MARK REG.



*Super-Zenith IX—  
the ideal radio set  
for the fine home,  
built-in loud-  
speaker; batteries  
concealed and out  
of the way.*

### Only the Best is "Good Enough"—

The difference between a radio set that "works"—even one that "works well"—and **Zenith**, is the difference between always longing for "something better" and the supreme pleasure of owning the best that money can buy.

True, Zenith costs a bit more, but evening after evening, month after month, **year in and year out**, you will thank your lucky stars that you paid that trifling difference and made sure of the best in radio results.

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The proof that Zenith is the set you want is yours for the asking. Only selected dealers who are prepared to **give service** handle Zenith. Ask your nearest Zenith dealer for a demonstration.

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**ZENITH RADIO CORPORATION**

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ZENITH—the exclusive choice of MacMillan for his North Polar Expedition

The complete Zenith line ranges in price from \$100 to \$475.

With either Zenith 3R or Zenith 4R, satisfactory reception over distances of 2,000 to 3,000 miles is readily accomplished, **using any ordinary loud speaker.** Models 3R and 4R licensed under Armstrong U. S. Pat. No. 1,113,149. They are **NON-RADIATING.**

**Zenith 4R - - \$100**  
**Zenith 3R - - \$175**

The new Super-Zenith is a six-tube set with a new, unique, and really different patented circuit, controlled exclusively by the Zenith Radio Corporation. It is **NOT** regenerative.

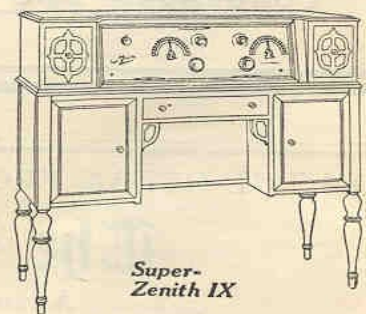
**SUPER-ZENITH VII**—Six tubes—2 stages tuned frequency amplification—detector and 3 stages audio frequency amplification. Installed in a beautifully finished cabinet of solid mahogany—44 inches long, 16 inches wide, 10 inches high. Compartments at either end for dry batteries. Price (exclusive of tubes and batteries) **\$240**

**SUPER-ZENITH VIII**—Same as VII except—console type. Price (exclusive of tubes and batteries) **\$260**

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*Super-Zenith IX*

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## NEW MEXICO RADIO COLLECTORS CLUB

### New Mexico Radio Collectors Club

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FOR INFORMATION CHECK THE INTERNET  
<http://www.newmexicoradiocollectorsclub.com/>

*The New Mexico Radio Collectors Club is a non-profit organization founded in 1994 in order to enhance the enjoyment of collecting and preservation of radios for all its members.*

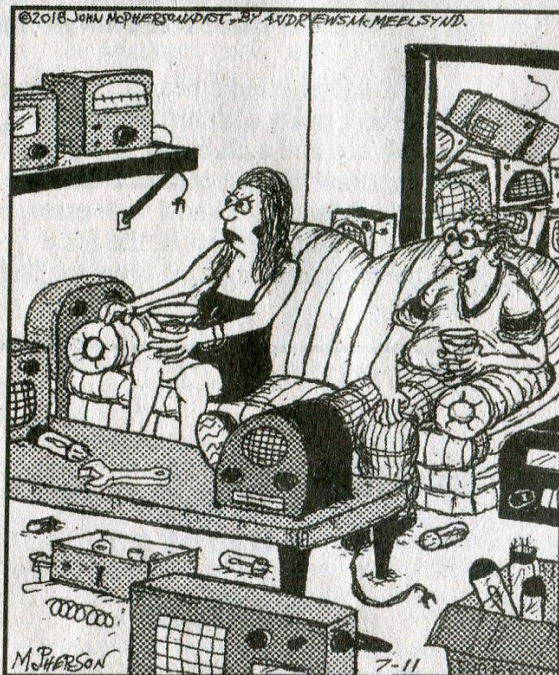
*NMRCC meets the second Sunday of the month at The Quelab at 680 Haines Ave NW, Albuquerque NM, 1:00PM meetings start. Visitors Always Welcomed.*

## NMRCC NEWSLETTER

THIS PUBLICATION IS THE MONTHLY NEWSLETTER OF THE NEW MEXICO RADIO COLLECTORS CLUB. INPUT FROM ALL MEMBERS ARE SOLICITED AND WELCOME ON 20<sup>TH</sup> OF THE PRECEDING MONTH. RICHARD MAJESTIC PRO-TEMP NEWSLETTER EDITOR, SEND ALL SUBMISSIONS IN WORD FORMAT, PICTURES IN \*.JPG FORMAT TO: [RMAJESTIC@MSN.COM](mailto:RMAJESTIC@MSN.COM)

USPS Stamp

CLOSE TO HOME



"Ohhh... YOU thought I was a radiologist! No, I'm a radio-ologist! I repair radios!"

BIZARRO

