

SOUND WAVES

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VRPS Spring 2025



From the President

As I write this, my wife and I just returned from Houston where we attended the Houston Vintage Radio Association (HVRA) annual convention. I always enjoy attending this event and have not missed one since 1999. They have a format similar to our own convention, focusing on the auction as a fundraising event. This year's auction featured several estates containing

nice collectible items which, of course, caused the bidding to be spirited. Not wanting to be left behind, I was forced to bid (I hope my wife is not reading this) and leave some of my hard-earned social security check in Houston when we left. Several of our VRPS members were also in attendance (and left money in Houston as well). Jerry, Bill, Jeff and a bunch of the Houston gang made us feel welcome, and I for one will be back. By the way, 1999 was the year I took over as President of the VRPS from Chevie Crandall. If my math is correct (never a guarantee), this will be my 100th "From the President" article in the *Soundwaves*.

On the local front, we have gained a few new members since the first of the year. I expect them to make a monthly meeting, so if you see an unfamiliar face in the crowd, introduce yourself. Remember you were a new member once. Welcome to Paulo Oliveira, Greg Hall, Steve Best, Tim Brownlee, Charles Wright, and David Hickman. See you at a meeting.

--Jim

VRPS Meeting Notes January 18, 2025

Randy James commenced the inaugural VRPS meeting for 2025, as there were limited announcements, he promptly transitioned to Larry Lindsey. Larry graciously offered his SGITR question, which was answered correctly by Kenneth Brent, who will now be awarded the esteemed accolade, the smartest guy in the room certificate.

Q - What is a COW (not an animal)?

A - Cell on Wheels - Kenneth explained that these are portable cell towers that provide wireless network connectivity used at disasters, emergencies, events and remote locations to provide telecommunication services.

Our speaker for the day was long-time VRPS member Rick Wilkins. In addition to his own collection, Rick served as the curator for the Olden Year Museum in Duncanville for over 50 years, which took him across the United States and to Europe several times while acquiring approximately 500 museum pieces. Olden Year closed its doors after it was inherited by a grandson of the original owner. An interesting note regarding the museum collection building is that if the humidity drops below 40%, several of the rare pieces will likely transition from a working collection to simply display items.

Rick brought several jewels from his personal items, of which, a few are highlighted below. Each of these treasures is functional.



S.C.R. 59 - Airplane Radio Receiver constructed by Western Electric c.1915. These first of their kind air-to-ground sets were used in WWI bi-wing aircraft. This set with three original 24 carat plated pin tubes includes the full shock mount and is only missing the headset. The ground crew and flight commanders were the ones that usually had the transmitters.

12" Regina Music Box c.1898. All original. Solid mahogany wood with shellac finish.

Victor II Phonograph c.1903 that has a beautiful wooden horn. Another all original set.

D. Alard & Co - Concerto Piccola music box made in Switzerland. This is the best sounding music box Rick has every had and it is also a beautiful example.

Rick then provided a detailed overview of the museum's history, culminating in its abrupt closure. He subsequently engaged in a Q&A session.

Our meeting concluded with a couple of quick member show and tells.

By Mark Walden

VRPS Meeting Notes February 15, 2025

Jim Sargent opened the meeting during which he advised that a few 50th VRPS Anniversary hats are left for purchase. See Jim for yours.

Larry Lindsey quickly went to his fill in the blank SGITR question as he knew Roland Gooch's presentation was going to fill our available time.

Q - The ____ computers have no music or video on them. (No correct answer was given)

A - Amish

Roland's presentation compiles practical troubleshooting strategies, repair techniques, and technical insights for vintage electronics repair, emphasizing innovative solutions for inaccessible components, tube substitutions, and modern diagnostic tools like IR imaging. This is a condensed version of his impressive offering.

1. Unusual Troubleshooting Jobs

Midwest Regal 1937 (22 Tubes, 2 Chassis)

- Issue: Bass expander circuit with 4 tubes after the output transformer, complicated by a resonant circuit in the transformer causing frequency-dependent impedance in series with speakers. The 2M2 ballast tubes (octal, unobtainable, no data available even in Frank's Tube Data) provide imbalance to the bridge circuit and temperature-dependent resistance.
- Analysis: The 2M2 tubes are critical but unavailable. The circuit includes a saturable core reactor, and the Rider drawing has errors (e.g., C86, C87 mislabeled).
- Solution:
- Mount extra tube sockets (7-pin and 9-pin) under the chassis, wired in parallel with the 2M2 sockets, to test various substitute tubes (e.g., 2AV2, 2BN4, 3AU6, 3CB6).
- Leave dead 2M2 tubes in sockets for appearance.
- Candidate tubes must handle speaker current through filaments (low voltage, high current). Analysis of tube specs (volts, amps, watts, hot resistance) provided for selection.

RCA PVCR-184

- Issue: After recapping and basic repairs, the center bass channel overloads due to modern broadcasts having more low bass than in 1959. FM tuner is dead.
- Bass Channel Fix: Increase negative feedback in the output stage (100% negative feedback used).
- FM Tuner Issue: Oscillator (OSC) dead, no negative voltage on the grid, other voltages OK, OSC coil not open.
- Analysis & Fix:
- C17 (12 pF ceramic capacitor) suspected. Tested at 12 pF (good at 60 Hz but bad at 100 MHz due to oxidized silver reducing Q factor).
- Replaced C17; tuner worked, but dial was off. Replaced C10, C11, and C16 to adjust dial settings.

Stromberg Carlson 61

- Issue: No response, no B+ on the plate of the RF amp, RF coil primary open, coil inaccessible.

- Analysis: Single primary is untuned; tuning provided by three secondaries with a small capacitor from plate to secondary.

- Fix: Added a resistor across the primary, resulting in only a slight loss of gain.

National NC183

- Issue: Strong oscillation on narrow frequencies in the SW band, affected by volume control setting.

- Cause: Slightly loose shell on the metal oscillator tube, causing acoustic coupling and varying plate-to-shell capacitance, leading to feedback in audio.

- Fix: Tighten or replace the tube shell.

Zenith 12U158

- Issue: Volume fades in and out; AVC voltage varies from -8V to nearly zero, occasionally positive (+0.2V).

- Analysis: B+ leakage into the AVC line through very high resistance, not detectable with an ohmmeter.

- Fix:

- Isolated IFs, band switch, and coils by removing tubes (6L7, 6K7, 6H6) and 4 red wires on the band switch.

- Identified carbon tracking on the switch rotor under bright light and a magnifier; removed it with a dental pick.

Car Radio (570 kHz Reception)

- Issue: Reception comes and goes with wiggling the converter tube; OK above 600 kHz.

- Fix: Cleaned and tightened converter socket pins, reflowed solder, confirmed bad joints on OSC grid and plate pins, cleaned, and re-soldered.

EM84 Eye Tube Issue

- Issue: Eye tube not responsive, opens after warm-up, grid voltage (AGC) drops, but tube tests good.

- Cause: Leakage too low to show on a tester ($<100 \mu\text{A}$).

- Lesson: Tube testers may miss low leakage; replace if symptoms persist.

2. General Repair Tips

Output Tube Socket Carbon Tracking

- Issue: High voltages at output plates (without a speaker connected) can burn sockets and kill transformers.

- Lesson: Never operate with the speaker disconnected.

Tube Socket and Solder Issues

- Intermittent/Noisy Sockets: Use a very small hypodermic needle, toothpick, or dental pick to clean and tighten contacts.

- Solder Joints: Ensure proper fillets; reflow or re-solder bad joints (e.g., car radio converter tube).

Inaccessible Capacitors

- Solution: Add a series capacitor to the accessible end (e.g., Midwest Regal, Philco). Use $C_{\text{added}} \geq 4 \times C_{\text{original}}$ to maintain AC coupling and block DC leakage.

Broken Octal Guide Pins

- Fix: Cut off a guide pin from a bad tube, align, and glue (e.g., JB Weld) onto a good tube using a socket fixture.

Plastic Dial Repairs

- Warped Dials (Grunow, Philco): Heat slowly in water (140°F), apply gentle force, cool under pressure, and reinforce with Plexiglass or credit card pieces.

- Broken Pointers: Use Bakelite capacitor mounting plates as a resource.

Rubber Dial Linkages (1940s French Radio)

- Issue: Disintegrating rubber universal joints.

- Fix: Replace with neoprene, add plastic stiffeners for rigidity.



Electrolytic Capacitors

- Wet vs. Dry: Wet (1920s–early 1930s) dry out, losing capacitance. Dry electrolytics (25–40-year life) fail via leakage, evaporation, or shorting.
- Failure Modes: Excess leakage heats electrolyte, increasing ESR and decreasing capacitance, causing hum or frying parts.
- Testing: Check leakage, capacitance, and power factor (>5–10% power factor indicates failure). Use a quick test with a light (4 mA threshold).

Paper vs. Modern Capacitors

- Paper Caps: Leak due to humidity soaking into paper, even in oil-filled designs.
- Mylar/Difilm (post-1958): Zero or low leakage, reliable for coupling, bypass, and filtering.

IF Transformers and Silver-Mica Issues

- Electromigration: Silver atoms migrate under electric fields (20 V/mm) in surface moisture, causing shorts between capacitors on the same mica side.

- Testing: Use an outboard power supply, disconnect AVC, and pull tubes. Clear shorts with a capacitive discharge (0.1 μF , $\sim 400\text{ V}$) as an emergency measure.
- Alignment: Use minimum modulated signals, adjust trimmers/slugs for max AVC voltage.

6X5 Rectifier Circuits

- Issue: Shorts (heater-to-cathode or plate-to-cathode) can fry transformers.
- Fix: Add an isolated 6V filament transformer or 1N4007 diodes in series with plates, plus a fuse.

Roland also covered some of his homemade tools and Visible and IR Imaging. Time up, meeting over.

By Mark Walden

Spring Auction 2025

Last November we celebrated our 50th anniversary as an organization dedicated to the preservation of radios and phonographs, both history and the mechanics. We celebrated those 50 years with a convention hosting almost 150 folks from many states. This past March we continued our 50 years as an organized body by hosting our 50th Spring auction. Of course, this sale has never been our major auction of the year; that was reserved for the annual convention. However, 41 members showed up, bringing with them treasures to be sold and money to buy something. Several items brought at least \$100. A few of the highlights included a really nice Silvertone model 1585 cathedral, a Zenith tombstone model 6S330 and a wood table set Airline with a telephone dial. The sales totaled an unimpressive \$2500, but because so many items were donated, the organization was able to put a few dollars in the bank after all expenses were paid. Other items included the following:

1. 2873.jpg White Westinghouse Refrigerator Radio, sold for \$45
2. 2876.jpg green Arvin Bakelite radio, sold for \$45
3. 2874.jpg a flat of 19cylinder records with sleeves bought \$50.



4. 2875.jpg A red portable Admiral 17" retro television in very nice condition
5. 2871.jpg One of two consoles sold at the auction This modern 60's looking Zenith sold for \$10.
6. 2878.jpg RCA "golden throat" brown Bakelite table set model 9X571 brought \$40.



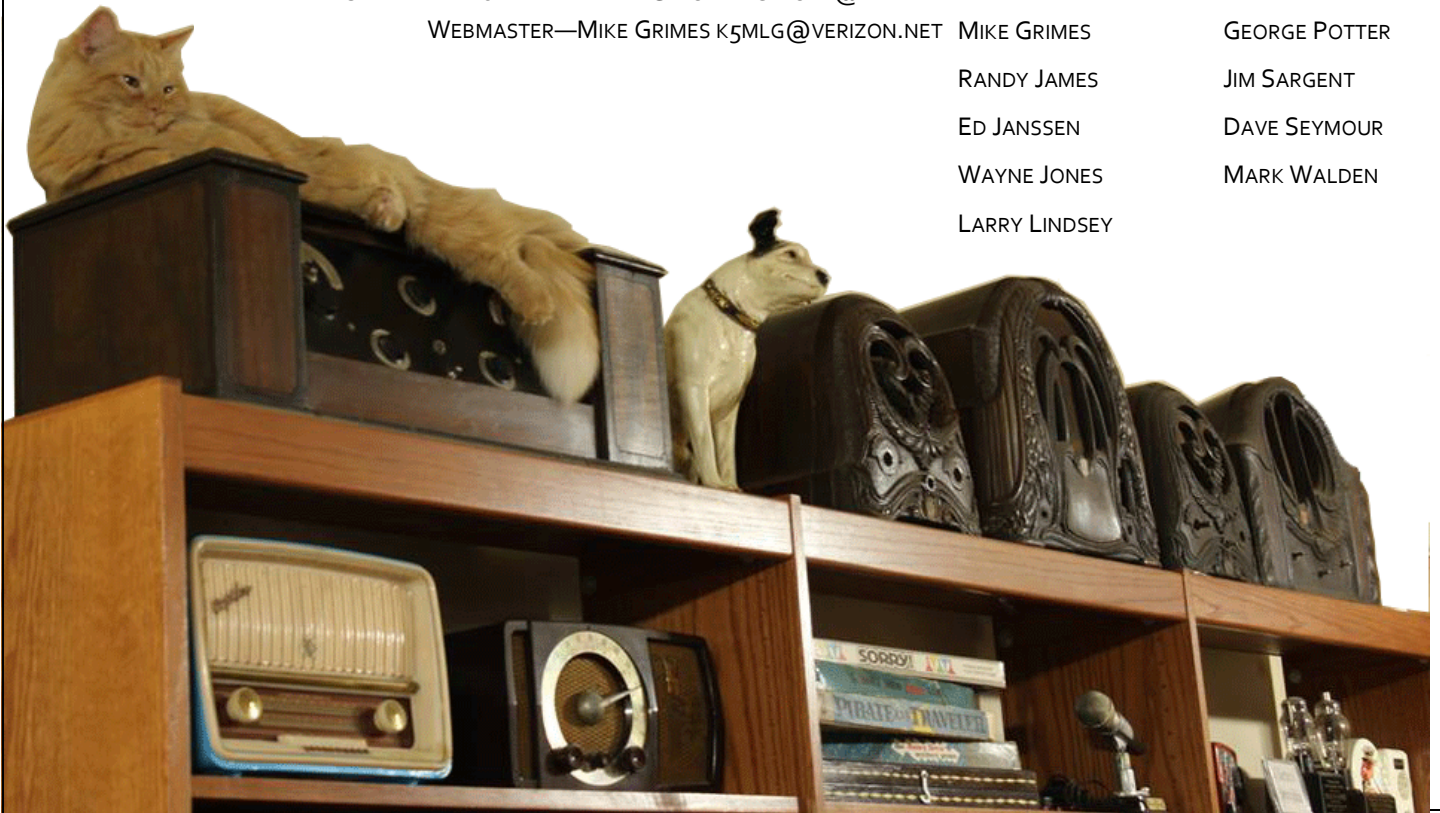
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MONTHLY MEETING PROGRAMS 2025

NOTE: Programs will be held at various locations in Irving, Texas. Make note of the location as they may change from time to time. Senter East, 1000 Senter Road; or Garden and Arts, 906 S Senter Rd. Maps are located on the WEB site, www.VRPS.org EVENTS page. Programs start at 2pm. unless otherwise noted. Call us if you get lost: 972-898-7251 or 972-742-8085.

Programs are subject to change, contingent on scheduling conflicts. As always, your suggestions for programs/content are welcome. I need volunteers to organize other programs, so consider presenting a program yourself. Call anytime or send an email: **Larry Lindsey email: pipilindsey@tx.rr.com telephone: 817-312-8761..**

- APRIL 19th GARDEN-& ARTS, IRVING, TX 1pm-4pm PHONOGRAPH & RADIO PATENTS 1877 TO PRESENT. Our trifecta of talent: Eric Kirst, Kenneth Brent and Kurt Ehrlich, will explore how key patents provide insight on a variety of companies. Process of procuring a patent is also discussed.
- MAY 17th SENTER EAST, IRVING, TX 8AM-NOON TAILGATE TRADE DAY
- JUNE 21st GARDEN-& ARTS, IRVING, TX NOON-4PM UPDATE ON 3-D PRINTING