

National CVRS Zoom Call – October 20, 2024

The call was attended by 13 participants, including one member from New Zealand, and lasted around 1.75 hours. Gerry O'Hara welcomed everyone and invited each participant to introduce and provide a little background about themselves. It was interesting to put 'faces to names', and find out a little about folks – many had a background in electronics, but others ranged from oceanography, environmental engineering, to carpentry and teaching.

Shahied Gairy then provided a 30 minute presentation on power transformers in vintage radios. This started out with some basic transformer theory, failure modes and symptoms, testing methods/diagnostics, and replacement options. The presentation then covered rewinding in very practical terms, from the information needed, eg. wires sizes, turns ratios, and voltages, tools

Rewinding

- Start with the primary, which is usually the closest to the center of the core.
- 1. Apply the heat shrink tubing, then start winding, keeping the wires firm and as parallel as possible.
- 2. Keep to layers, moving slowly across the width of the former and back again. This way no wires with serious voltage differences are close to each other.
- 3. Once a winding is finished, apply heat shrink tubing again, bring the wires out, apply layers of insulation and continue the process until all the windings are finished.

The next step is to attach all the lead wires to the windings and insulate everything.

- Test all windings for continuity
- Assemble the laminations using the identical pattern originally used. Try to get as many as possible back in. You probably won't get all back in. 2 or 3 left out isn't usually a problem but more than that isn't good.
- Apply any frame and/or bolts and tighten.

and materials required, example calculations, followed by rewinding techniques, including how to make a former (bobbin) to wind the wire onto if the original transformer did not have one, testing, and making adjustments if needed. A lively Q&A session followed, which included suggestions and more practical tips on the subject. Shahied is preparing an article based on his presentation for a future issue of 'Canadian Vintage Radios'.

Information Required for Rewind:

If you have access to all the information needed, everything can be calculated.

1. **WIRE SIZES** – Primary as well as all secondaries.
2. **TURNS RATIO**
3. **VOLTAGES** – Primary and all secondaries. Usually this is either specified in the circuit diagram or can be easily determined by experience.

But in most cases with an old radio, you may not have all the information at hand.

THEREFORE, SOME REVERSE-ENGINEERING MAY BE NECESSARY.

Gerry O'Hara then gave a 'show and tell' of his restored 1938 Howard Model 450A communications receiver operating with a refurbished 1944 US Army 'Panadapter'. The panadapter provides a visual display of signals up to 100KHz either side of the signal being tuned in, and was used by the military for spotting, identifying and tuning signals, particularly in monitoring situations, where the exact frequency of a station of interest may not be known, transmissions were intermittent, sporadic, included frequency 'hopping', and/or when adjacent channel interference was suspected. A video of these units in use can be viewed [here](#).



Grant Sesak showed attendees a Broadcast Band AM transmitter kit he had recently built, noting that it works really well and cost only around \$22 from AliExpress. Several attendees expressed interest in the kit and Grant provides details of where to purchase it (link [here](#)).

The call rounded off with some general 'radio chit chat' and goodbyes until the next time – probably in the Spring of 2025.