

Restoring An AR-1375 Radiola Concert Receiver

by Eric P. Wenaas

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In the course of photographing images for my recent book *Radiola*¹, it was necessary to restore a number of radios. Some required only relatively minor changes, but a few needed more aggressive work. One of the latter was the Radiola Concert AR-1375 crystal set manufactured by Wireless Specialty for RCA in 1922. This set is of particular interest to the collector and historian because it was the first mass-produced radio sold by RCA to carry the now-ubiquitous Radiola trade name. It is also one of the rarest and most valuable of all early RCA broadcast radio receivers.

I originally undertook this restoration because I could not locate an original receiver to photograph for the book, not even one that had been properly restored. Fortunately, after an exhaustive search--and just before the book was published--I was able to locate a collector who had what I believe to be an original AR-1375. While it is the only one that I found to be correct, I am sure there must be others. This collector graciously supplied photographs for inclusion in the book, which I also used to help with my then-ongoing restoration project. One of these photographs—the interior of an original Radiola Concert crystal set--appears on page 157 of my book.

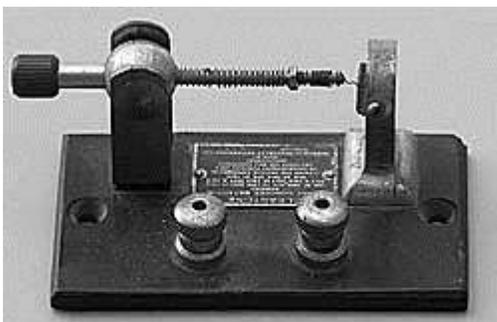


Fig. 2. Parts for the AR-1375 detector were taken from a Wireless Specialty Cleartone Radio Concert Detector like this one.

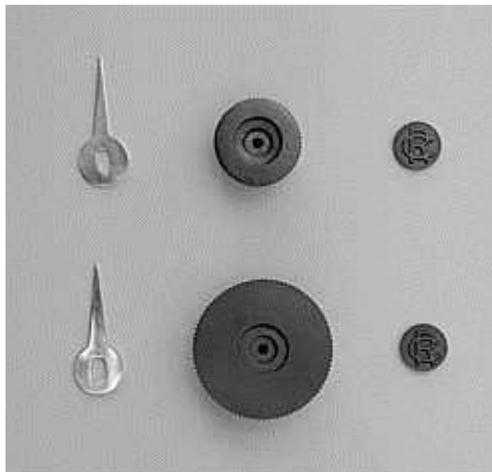


Fig. 1. Knobs, pointers and logos ready for installation on the panel of the reconstructed AR-1375.

Original AR-1375 crystal sets are extremely rare today because almost all were converted by Wireless Specialty in 1923 to the "Radiola Special." That set was a regenerative receiver made by integrating a UV-199 tube onto the AR-1375 chassis in lieu of the crystal detector. Consequently, the starting point for this restoration was a Radiola Special, completely stripped down to the original AR-1375 panel—including removal of the metal Radiola Special panel which cleverly covered the original AR-1375 dielectric panel.

All of the components used in this restoration were original Wireless Specialty components except for the bus wire, two disks with the interleaved RC logo used on the knobs, and the two metal pointers. The metal pointers and the two disks, cast from the original and shown in **Figure 1**, were supplied by a fellow collector.

All of the components except the RC logo disks, the large knob and metal pointers and the crystal detector assembly can be found on Radiola Specials. The knobs and pointers are used on other Wireless Specialty equipment



Fig. 4. The exterior of the restored AR-1375 is virtually indistinguishable from the original — except for small blemishes associated with the filling of two holes (see text).

such as the IP-503 Loading Unit; the crystal detector assembly is found on stand-alone Wireless Specialty Radio Concert detectors such as the one shown in **Figure 2**. Both the loading unit and the Radio Concert detector occasionally appear in the auction market on the Internet.

A schematic diagram for the original crystal set, reproduced here as **Figure 3**, appears on page three of the Operating Instructions. The manufacturer's diagram follows the physical layout of the components and wiring as viewed from the rear, so I began the restoration using this diagram for the wiring plan.

Howeve

r, after later obtaining photographs of the original set, certain adjustments to the wiring were necessary.

This crystal set is actually quite simple with only five interior electrical components: a variometer, three capacitors, and a switch. The two capacitors shown on the left side of the diagram were manufactured as a single unit with three leads.

To begin the restoration, everything not needed for the final configuration was removed from the AR-1375 panel including

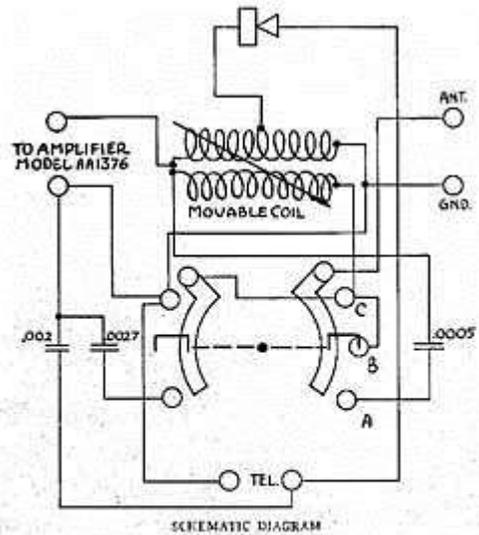


Fig. 3. Schematic diagram of the AR-1375 from the Wireless Specialty Instruction Manual. It follows the physical layout of the components and wiring when viewed from the rear.

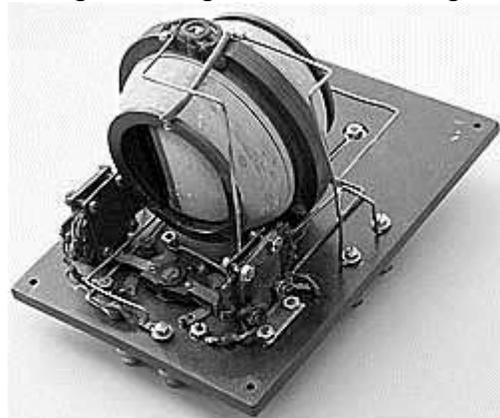


Fig. 5. The interior of the reconstructed AR-1375 is virtually identical in appearance to the original appearing on page 157 of Radiola.

the wiring. Two holes drilled in the front panel during the conversion to a Radiola Special by Wireless Specialty were filled with epoxy. One of these was directly behind the crystal detector handle; the other just over the Station Tuning Dial. A very small amount of white lettering marred by the second hole was then touched up.

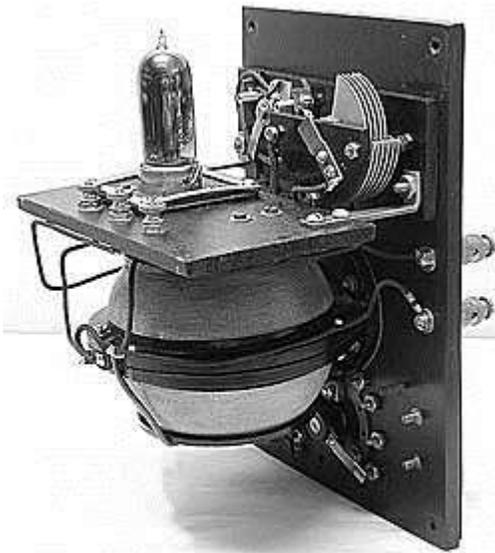


Fig. 6. The interior of the Radiola Special, which was used as a starting point for this restoration project, is significantly different than that of the AR-1375.

The two capacitors were remounted in their proper places on each side of the switch, and the binding posts and crystal detector were installed on the front panel. The set was then rewired using bus wire with a square cross section similar to the original. As mentioned, the wiring was later modified to conform to the photographs of the original set. Finally, the knobs were secured on the shafts of the wavelength switch and tuning variometer with screws, and the RC logo disks were inserted in recesses on the faces of the knobs to cover the screws.

It is interesting to note that the set appearing in the photograph on page two of the Operating Instructions, which is apparently a pre-production unit, has the RC logo disk on the lower knob rotated 90 degrees relative to the pointer as compared to the production units, a photograph of which can be seen in

RCA's catalog *Radio Enters the Home* published in 1922. The logo positions on the restored set follow those of the photograph in the RCA catalog which matches those on the original set owned by my fellow collector—but not the photograph on page two of the Wireless Specialty Instructions.

The exterior of the resulting restoration shown in **Figure 4** is virtually indistinguishable from the original, except for the tell-tale blemishes resulting from filling the previously-mentioned holes, which can be observed only by someone who knows exactly where to look. The interior of the set, shown in **Figure 5**, is also virtually identical to the interior of the original AR-1375 appearing in Radiola. The interior of a Radiola Special is shown in **Figure 6** to illustrate the substantial differences between a Special used as a starting point for this project and the restored AR-1375.

¹Eric P. Wenaas, *Radiola: The Golden Age of RCA, 1919-1929* (Sonoran Publishing, LLC, Chandler Arizona, 2007).