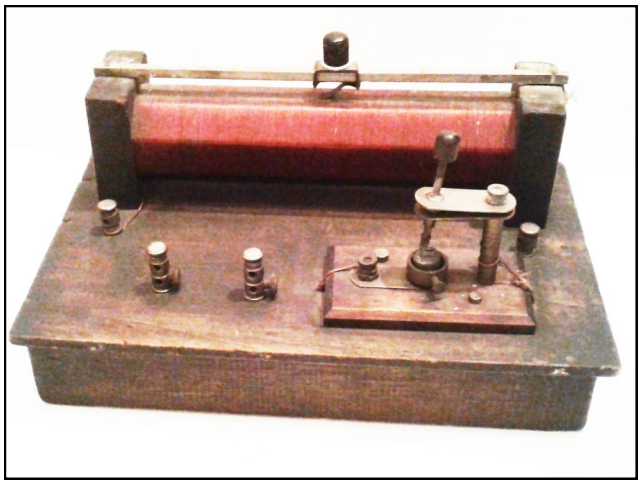
National Capital Radio & Television Museum

Artifact of the Week:

1920s Homemade Crystal Radio



In the early 1920s entertainment radio was just getting underway. People were eager to join in on the excitement, but factory-built radios were expensive. The cheapest and simplest option was a homemade crystal radio. (To learn more about crystal radios see the feature article in the December 2012 *Dials and Channels*).

A crystal radio had two main parts: a tuning device to select stations, and a "detector" to separate out the audio signal riding on the radio carrier wave. The homemade radio here uses a cylindrical coil of wire with a slider to tune to the desired station. The crystal in the detector unit on the right is probably a chunk of lead sulfide (a crystal of the mineral galena), in the little cylindrical holder. The movable rod above it terminates in a fine wire called a "cat's whisker," which the user pokes around on the surface of the crystal to find a responsive spot. Crystal radios required no batteries and had no amplification, so to capture enough signal strength to receive stations, a long outdoor wire antenna and a good ground connection, such as a copper rod driven into the ground, were required. A pair of sensitive earphones would have been connected to the two binding posts on the lower left.

Plans and instructions for building and using a simple crystal radio appeared frequently in newspapers and magazines in that era. This radio was constructed on a simple wood base, probably using pieces of scrap lumber. The crystal detector stand and the slider (as well as headphones and antenna components) could have been purchased from a mail order catalog or even a downtown "dime store."

People who grew up in that era often recall how exciting it was the first time they put on earphones and heard "the miracle" of music and voices coming through the air. Untold thousands of Americans heard their first radio broadcast on a homemade crystal radio. Once they realized how enjoyable and informative radio could be, many were induced to save up their money to purchase a better performing factory-built vacuum tube radio with a loudspeaker so the whole family could listen together.

We appreciate your support of the museum so that historical artifacts like this one, and the stories that go with them, can be preserved for future generations. THANKS!