Restoration

of a

Radiola 60 Radio and RCA 103 Speaker

for the

Bandon Historical Society

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August 2015

On July 28, 2015 a proposal was made before the Board of Directors of the Bandon Historical Society Museum to restore the museum's Radiola 60 radio. Time and materials for the restoration would be donations and the objective was to restore the electronics to working order for on-going play during museum hours and to modify the radio cabinet and speaker's appearance to more closely resemble the radio when it was new. The Board graciously agreed to the restoration.

Radio's History

The RCA Radiola 60 was released in August 1928 and discontinued in September 1930. Marketed by RCA as its first "socket powered" superheterodyne radio, the set was designed and manufactured by General Electric and Westinghouse who were in a business relationship with RCA. The radio sold for $210 (roughly $2850 in 2015 dollars) and there were approximately 135,000 sets made.[1] This chassis

was serial number 249674 ED. Based on a Reno Radio label found on the 80 rectifier this radio spent part of its life in July 1935 in Detroit Michigan. I was able to locate the Reno Radio shop location from an advertisement in a November 1952 *Popular Mechanics.*

The wooden cabinets for the Radiola 60 were made by a variety of furniture makers. In the case of this particular cabinet, the manufacturer was R. Prescott & Son, Inc. of Keeseville, NY as shown by the metal tag on the inside of the cabinet.

[1] Wenaas, Eric P., **Radiola: The Golden Age of RCA, 1919-1929,** Sonoran Publishing, Arizona, 2007, p. 400**,** 413.

Cabinet Restoration

The radio's cabinet was in relatively good condition although the lacquer was cracking, there were water and paint stains on the lid, the color on the front was faded and a small piece of veneer was missing on the top. In addition, someone in the past had drilled 3 holes in the back of the cabinet to provide access to the compensation capacitors on the chassis. I elected not to attempt to fill these holes.

Radiola 60 with 103 Speaker unrestored

Back of radio

Top of the radio lid

The escutcheons were removed; the cabinet was disassembled and stripped of the original finish. A small piece of veneer on the top of the cabinet was replaced.




After grain filling, Mohawk medium brown walnut Ultra-Classic® toner was used to tone the cabinet and Van Dyke Brown toner was used for the trim.

Multiple coats of Deft gloss spray lacquer were the final clear coat followed by rub out with 4F pumice, rottenstone and paste wax finish.

Speaker Restoration

The speaker's grill cloth was extremely fragile and was torn in the circle around the edge of the speaker cone. Since the objective was to play the radio on a regular basis, this cloth would not hold up over the long term and a reproduction replacement was purchased and installed. The frame of the speaker was made with a material that was called repwood which was a mixture of sawdust and glue that was molded into the desired shape. The frame was cleaned with damp cotton swabs and a light clear lacquer coating was applied. The original silk bonnet that was used to keep dust out of the back of the speaker was missing except for a small piece seen below, thus a replacement was obtained and installed. The wires that connect the speaker to the radio were badly frayed and also replaced.

Original Speaker

Restored Speaker

Chassis S/N 249674ED Restoration

The electronics are contained in two chassis sections, one for the supply of power and the second for the remaining components. They are connected by a terminal strip and wires found under a cover plate.

Electronics before restoration

Electronics out of the cabinet

Connecting Terminal Strip

Underside of Electronics and Power Supply

The main restoration of the units was a general cleaning followed by the replacement of the paper capacitors housed in the capacitor can on the power supply. This required dismounting the can, removing the old paper capacitors and replacing them with Solen metalized polypropylene capacitors rated for 630 volts. The wiring diagram is found in the Radiola 60 Service notes on p. 18 (Figure 14).

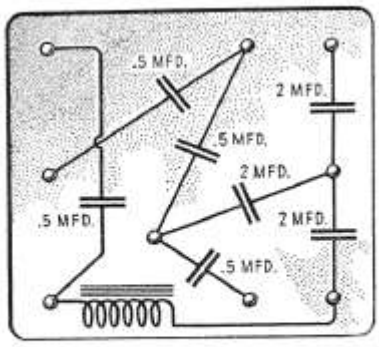
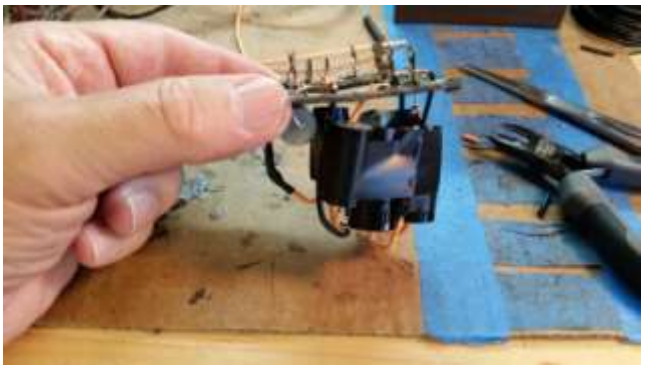


Figure 14—Internal connections of filtering and by-pass condensers, and output condenser and choke



Filter Can Restoration

There were also two by-pass filter cans that needed the capacitors replaced.

The 2250 ohm wire-wound plate resistor was open and replaced with two parallel 4700 ohm 10 watt wire-wound resistors. The parallel resistors yield a 20 watt 2350 ohm resistor. Close enough in resistance and overkill in wattage. A 1.5 amp fast blow fuse was inserted into the new reproduction cloth covered power cord line for safety. I kept in under the chassis for appearance although this will require the power supply to be pulled from the cabinet for replacement.

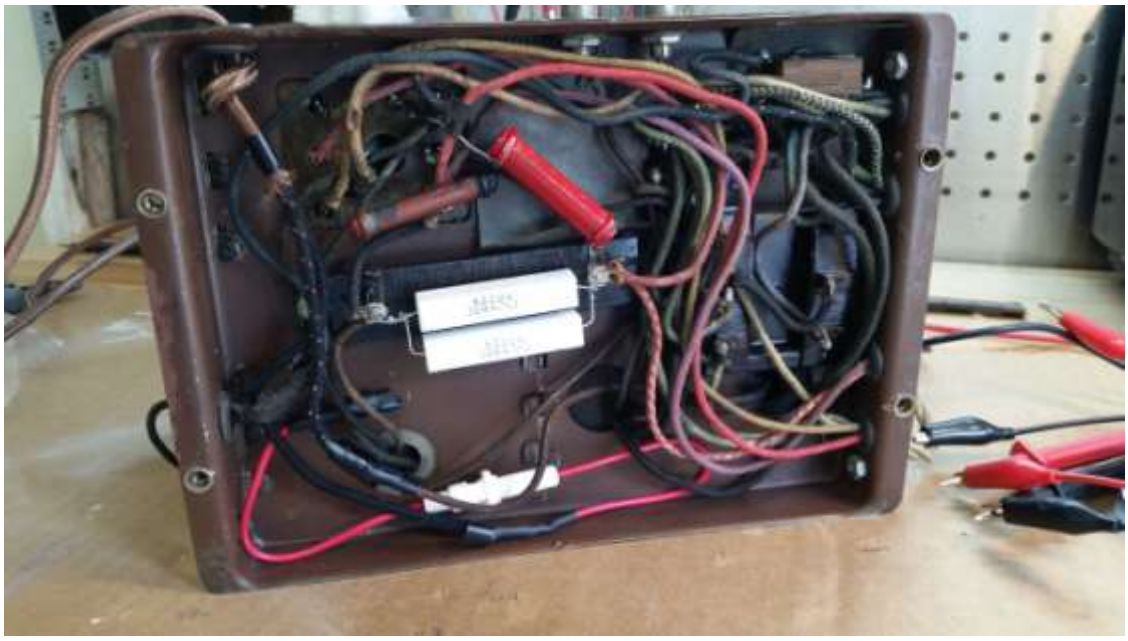


Plate Resistor Repair and Fuse Added

The original Plate Resistor was left in place and the wire lugs used for the replacement resistors. It may be possible to rewind the original at some future date. Other resistors were checked and found to be within 20% of the specified values so they were not replaced.

The brown wire that goes between the plate of tube #8 and lug #1 of the terminal strip was found to be faulty and was replaced.

Tube sockets and tube pins were cleaned with Deoxit.

SSTRAN Low Power Transmitter

While there are still AM broadcast stations available, only a few can be heard on Oregon's coast. The strongest in Bandon is KWRO in Coquille OR at 630 AM. To provide the Museum with a reliable and customizable ability to broadcast on the AM band, an SSTRAN AMT3000 low power AM transmitter kit was purchased and assembled. It can be programmed to broadcast at any frequency between 530 and 1700 kHz. As provided to the Museum, it is set for 1150 kHz. This frequency can be heard on the Radiola 60 by tuning the dial to a setting of "20". The Radiola 60 tuning dial is not marked in frequencies or channels, it is simply a set of numbers from 0 to 100 and the listener has to note the number on the dial for their favorite stations.

Radio, speaker and transmitter delivered to the museum on 9/3/2015.