

Model Q34 (1947-1948)

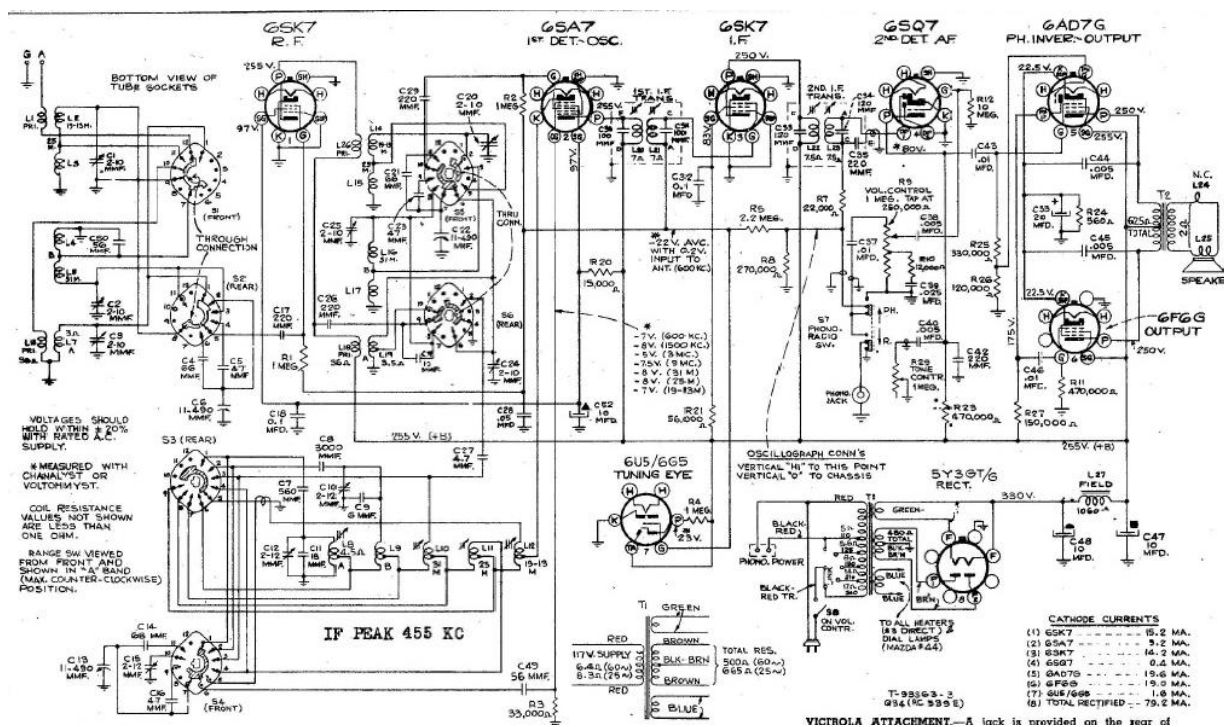
RCA Radio Corporation of America

Restoration

In September 2014, I received some older receivers by the daughter of Sergeant PM Ibanez Mulina Costa (in memoriam). The military police officer was more passionate by tube receptors and whenever he could radio in his city *Rosário do Sul* (South of Brazil) he threw himself boldly in the recovery of the equipment. Although did not get all the old parts to turn it into a very original radio, all their radios were well maintained and working, even if precarious due to the time they were stored.

Among many received radios, a RCA Q 34, RC539 chassis showed up. This is a super-heterodyne built in the years 1947 and 1948 by the Radio Corporation of America in the United States.

The Q34 scheme, courtesy www.nostalgiaair.org, is as follows:



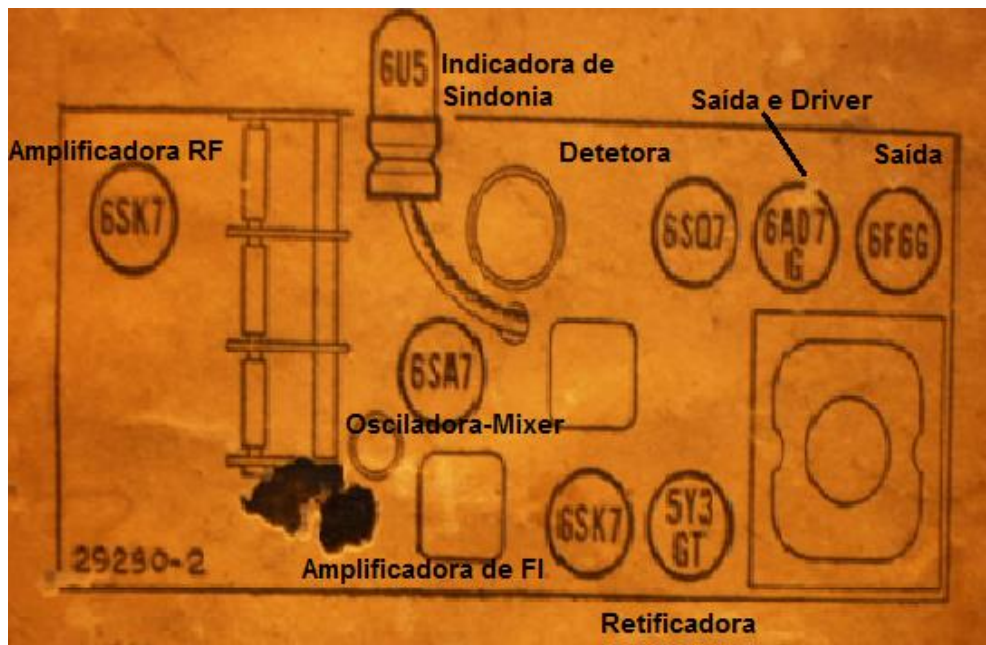
1. Initial checks

When taking the chassis wooden cabinet and after cleaning dust and dead insects, I noticed some facts that contradicted much originality. Several valves did not correspond to the scheme and the rectification occurred by two diodes connected to the high voltage input transformer wires, as shown in the pictures below.

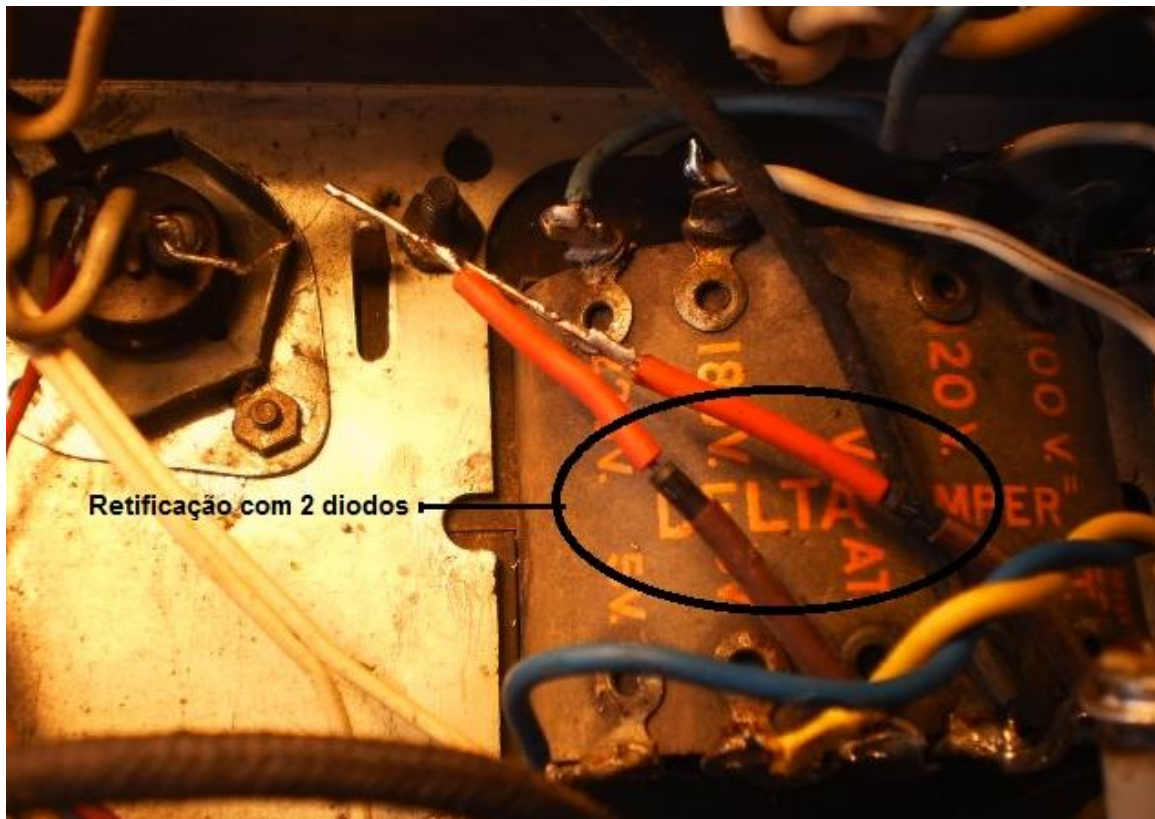
The Q34 RCA uses the push-pull one 6AD7 tube as a 6F6 tube. The 6AD7 also acts with driver tube. In assembly received in place of 6AD7 was another 6F6 and as driver was used a 6J5 valve. It was also incorrect valve, which operates as oscillator and mixer: instead of the original 6SA7, one 6BE6 valve was placed and connected with wires to the base.



The chassis as received with non-original valves.



Left the original scheme of valves and right exotic 6BE6 valve connected with an adaptation by wires to the base of the original 6SA7.



In the photo, the use of two rectifier diodes connected to the high-voltage input transformer.

The output push-pull transformer and a shock were screwed in the upper right corner of the back of the box, as pictured below. On the other hand, the original speaker of the RCA Q34 is a rare type of oval shape and electrodynamic operation. Not getting this piece, the former owner used an oval AF, but with permanent magnet. It requires a big filter shock, which held the wood, in side the push-pull transformer.



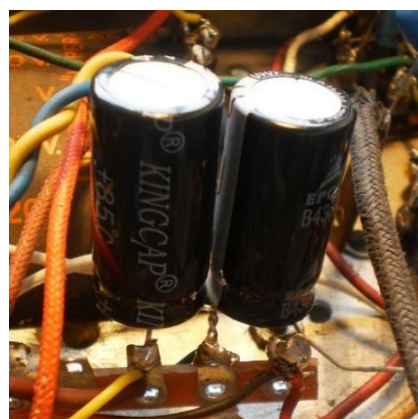
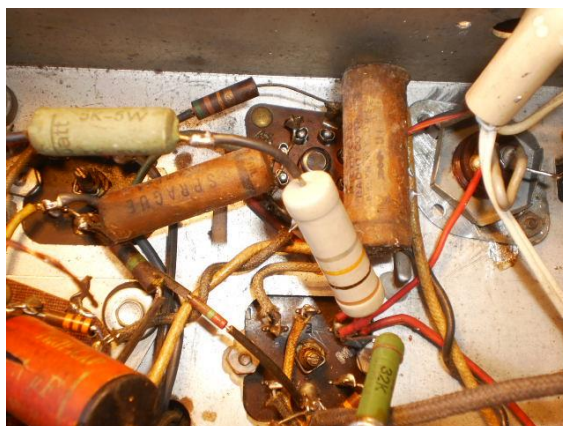
2. The correction by tube rectifier and the speaker

Beginning the restoration I always start providing the rectified voltage operation, called B + (VCC), which resulted in the placement of a basis for 5Y3 rectifier valve and its high-voltage and filament connections. Although I received the radio with rectifying diode, luckily, the input transformer had 5 VAC outputs to feed the filaments of the rectifier valve 5Y3, the original rectifier tube in the scheme. In follow-up, arranged one electrodynamic speaker to serve as a filter shock to the + B. Unfortunately, I only had a circular AF: it is rare of finding an electrodynamic and oval speaker.

A new push-pull transformer was mounted in the speaker with twisted wires to the two plates (6F6 and 6AD7), the cathode connection of the rectifier valve and the return of + B (pictured below).



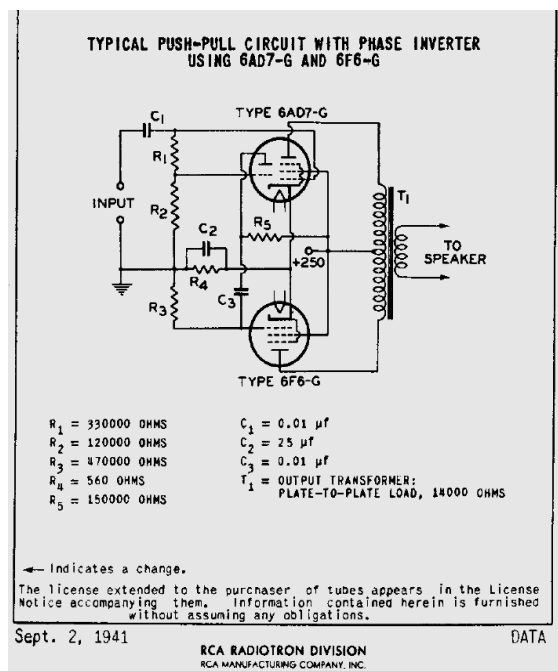
After I mounted two electrolytic capacitors 47 microfarads x 450V each and redone all longstanding and continuous distribution of B + voltage. The other defective capacitors were replaced. In the photos below, one aspect of the common old capacitors and two new electrolyte.



3. Push-pull power tubes

As courtesy of partner Sergio Caon, I installed the 6AD7 valve. It has two functions; it acts as "driver" and as push-pull output.

The original RCA scheme (left), very clarified assembly. It operates with its left part (triode) as a phase inverter (drive). On right (heptodo) as output valve, such as 6F6. In the image at the right, it is assembled ready and working with the 6AD7 between 6F6 and 6SQ7 (detector tube).

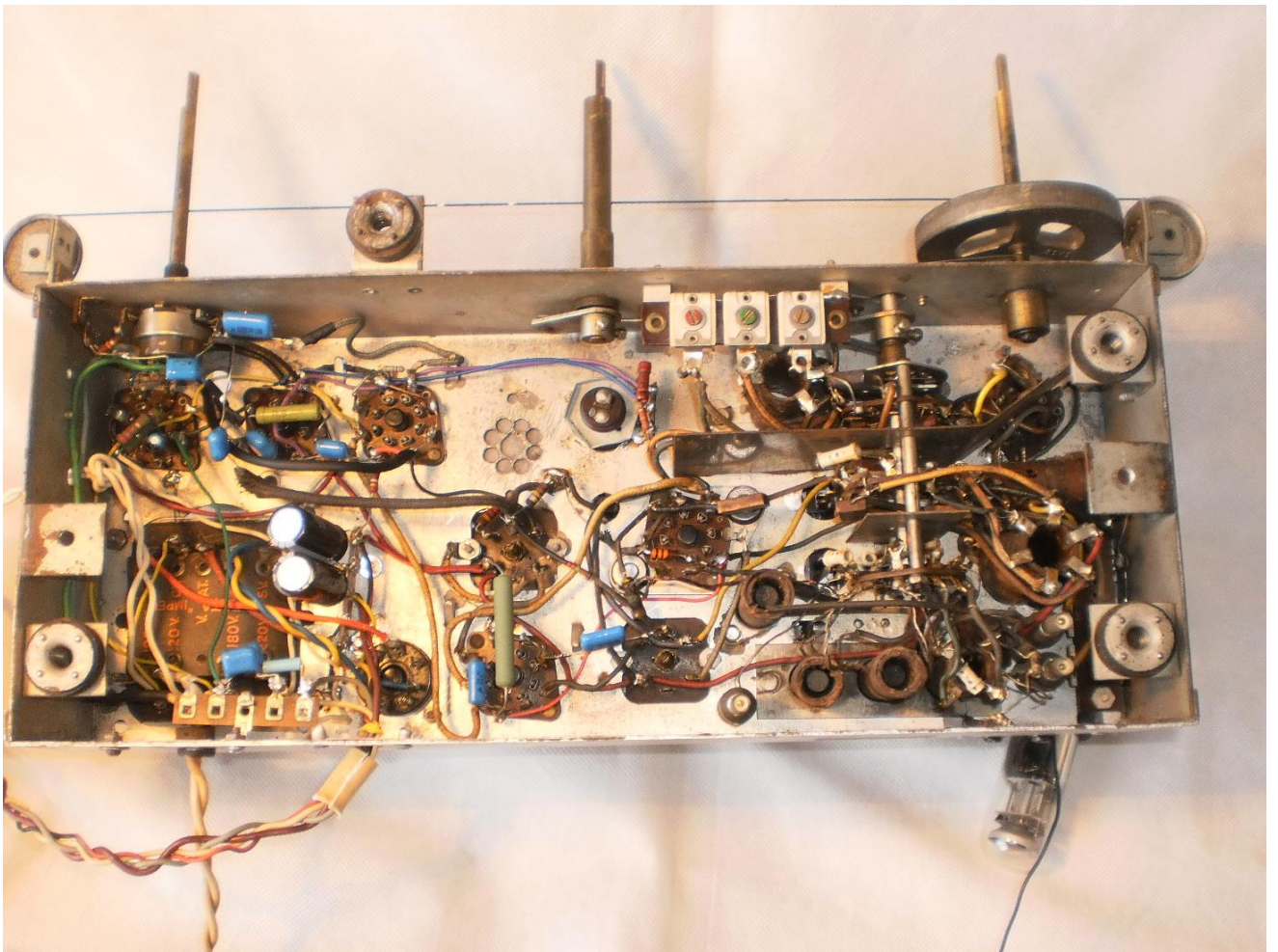


4. Finishing the electrical restoration

The circuit was received with capacitors "tired" and some inadequate resistance. After replaced the correct tubes and the capacitors, it was time to check the tensions, with the placement of new resistance, leaving the ratings shown in the table below:

Válvula	Placa (VCC)	Screen (VCC)
6F6	230	243
6AD7	Pentodo= 230 Triodo=200	243
6SQ7	146	-
6SK7 FI	243	84
6SK7 RF	243	84
6SA7	243	Screen=84 Anódina= 100
5Y3	Catodo=319	+B = 243

The following figures show how the circuit was received before and after the electronic restoration:



4. The tissue and the restoration of the cabinet.

Before the cloth, I had to hit the hole timber, because the Q34 receiver used an elliptical AF. With the indispensable help of Helena Halushuk, to adjust the AF support plank to a circular design and fix the tissue. In the radio's cabinet there was a crack, which was restored. Better than words are the photos:

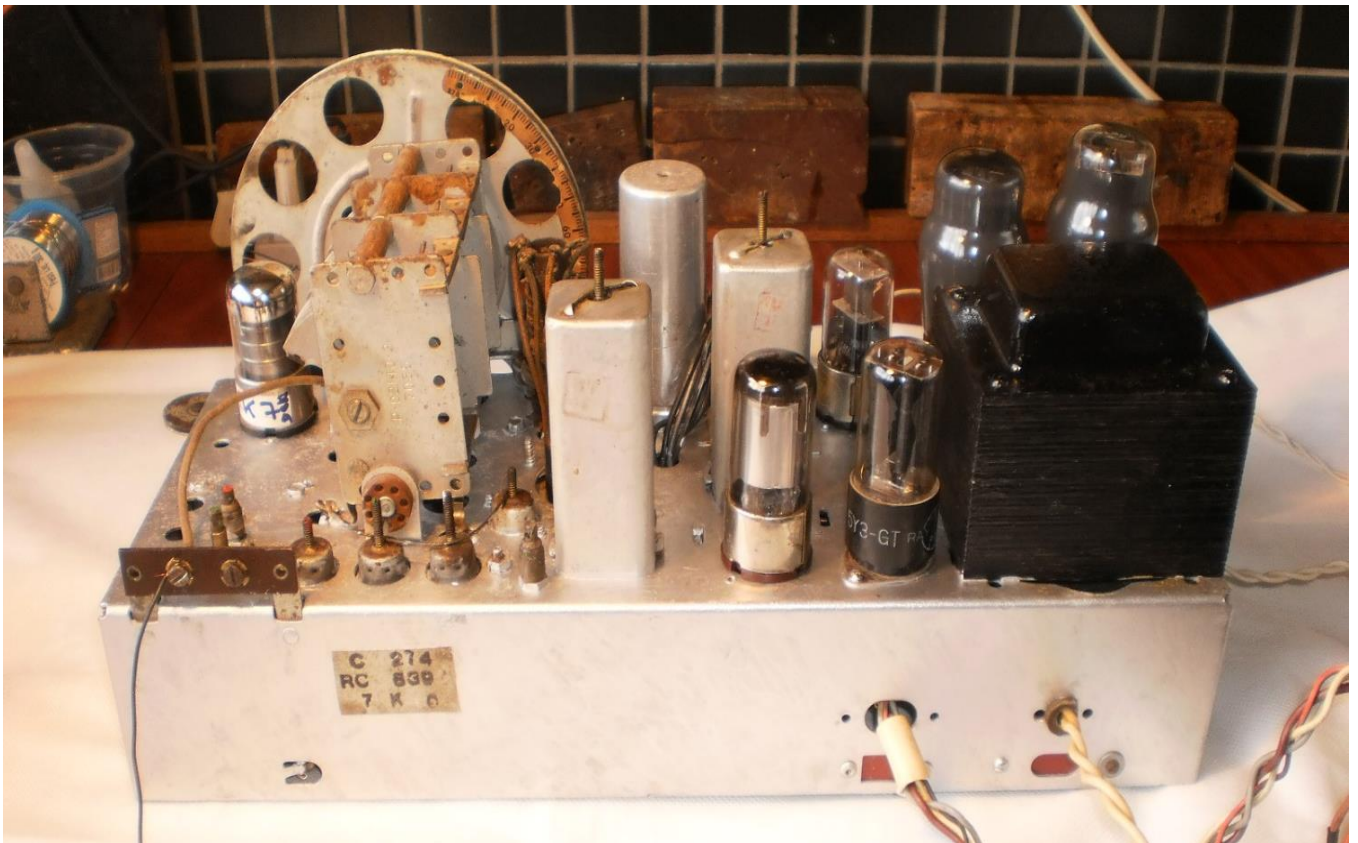


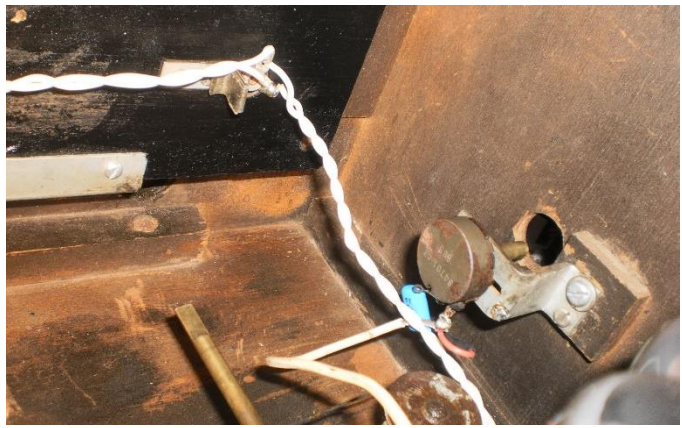
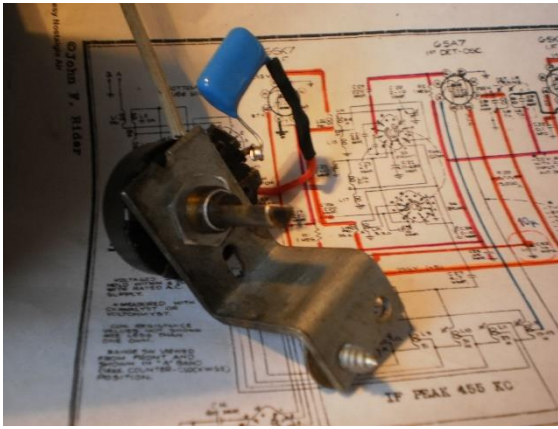
Right above, the job is done. The following was placed at the bottom and on the fabric, a black cardboard strip to make the highlight of the dial on the fabric (pictured left).

5. Chassis painting and tone control.



Lots of cleaning with brush and thinner and two hands automotive lacquer.





Above, tone control of the restoration of photos, with internal cleansing pot and capacitor replacement.

Anyway, understanding of the difficulties that fond of old radios had to get correct schemes and valves, only the restoration and return the maximum possible originality left me satisfied.

