

# *Jackson-Bell* *Model 8 Radio Analysis*

By Richard Gray and Jim Ryan

This document is a collaborative effort by Internet and telephone between Jim Ryan as the set owner and Richard Gray as the document reviewer.

My ownership of this radio has prompted me to collect extra components for the set over time. I have also procured a framed example of the La France Art Company tapestry used as the Model 8 grille cloth.

I took this set apart to record what could be found. Richard's experience with his own Model 8 long ago and his years of expertise as a collector, engineer, and historian have been invaluable in this effort.

Jim Ryan -10/31/2023

All Image comments by Jim Ryan are in blue.

All comments by Richard Gray are in red.



The Model 8 cabinet has a distinctive tapestry grill cloth.

The ornate repwood trim has suffered obvious deterioration.

The cabinet is in decent condition with some repwood shrinkage.  
The damage might be repairable with wood putty and refinishing.

The grille cloth is badly faded with no holes.

## Please Note:

Due to construction similarities between the Model 6 and Model 8, some of the same images and text appear in both Model analysis documents. Refer to the Model 6 Analysis for comparisons.

## Model 8 Disassembly Email To Richard Gray

### Email from Jim Ryan to Richard Gray:

Subject: The Model 8 Orientation

Date: 29 August, 2023

Richard:

I took the Model 8 into my workroom to begin taking it apart and to photograph. That beast is HEAVY! I had forgotten how heavy until I began moving it again.

I took my time to be sure that I didn't damage anything, and took photos as I went along to assist with reassembly.

Some of the first shots are dusty and dirty. I wasn't worried about white backgrounds but did try to get flat shots with good lighting.

Lots of rust on the chassis.

### Some things I discovered:

- (1). A note inside that says - "Russ, This radio works great, but it needs a long ant and a good ground".
- (2). The speaker is mounted to a piece of beaver board and held in place by four screws out of the top of the speaker magnet housing.
- (3). I compared it to some speakers online and it appears to be an early Jensen / Magnavox.
- (4). A part of the cone is missing.
- (5). The grille cloth was mounted to a piece of plywood cut to tightly fit in the front with some of the tapestry showing on the inside.
- (6). The chassis slides into a sheet that was glued to the bottom of the cabinet. It was no longer attached making the chassis removal difficult.
- (7). To prevent damaging the repwood, the speaker or the dial assembly I laid a towel on the table and laid the cabinet on its side before removing the speaker mounting screws.
- (8). Here are the photos attached below. I may have to make this multiple emails. Big files.

Thanks for your time,

Jim Ryan



This La France Art Company tapestry is from eBay  
This is as it should appear as grille cloth.

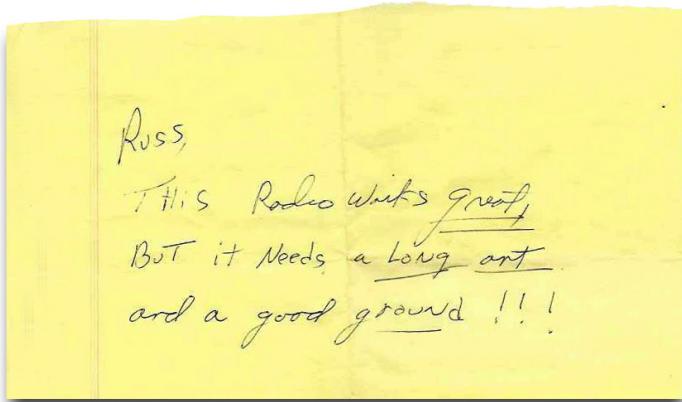


The other known version of the La France Art Company tapestry used on the Model 8.

See Richard Gray's personal dossier for more information regarding his work on this set.

## Taking The Model 8 Apart:

A previous owner had placed a note inside the cabinet to the next recipient of the set. The note provided some telling details about the performance of the set and what would be needed to operate the set.



**Note found between the chassis and cabinet side.**

**Not a great performer, as indicated by the last known owner's comments...**  
**'Needed a long antenna and a good ground!'**

## Chassis Secured by Pan-And-Rail System:

One of the first things I noticed in removing the chassis from the cabinet was the similarities between the Model 8 and the Model 6 chassis mountings.



The Model 8 metal pan-and-rail system shown above helps guide and anchor the chassis. See the image on the next page for another view of how this system was implemented.



Another view of the metal plate-and-rail system used in the Model 8. The channels formed in the metal plate were designed to receive the chassis rails.



**Rear view of the Model 8 cabinet & components**

**Note speaker mounted to top of cabinet**



**The metal ID plate attached to the model 8 chassis**

## Inside Cabinet (Top of Chassis & Speaker):

The image below provides an overview of the component layout on the top side of the chassis.

Use the numbered yellow circle labels to reference the corresponding entry in the "Component Layout Guide" provided below the image.



Chassis layout viewed from the cabinet rear

## Component Layout Guide:

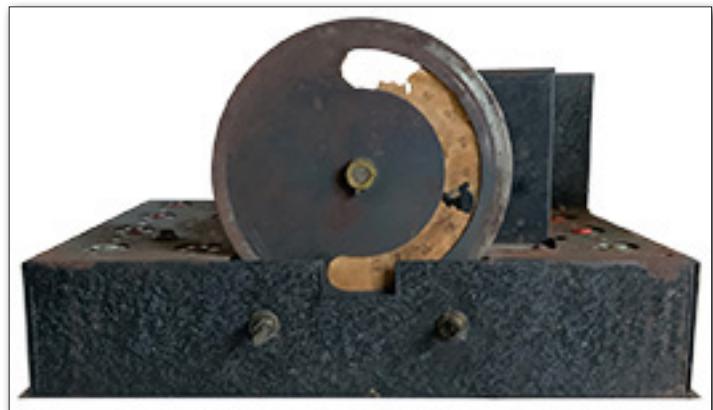
1. Speaker suspended from top of cabinet.
2. Voice Coil plug and connector pins
3. Speaker Field Coil through chassis wiring
4. Phono Input
5. Antenna and Ground terminals
6. Power Transformer
7. Capacitor Block
8. Right Side Tubes = 26, 26, 26, 27
9. Left Side Tubes = 71A, 71A, 27
10. Rectifier Tube = 80



Gilfillan/RCA metal license plate



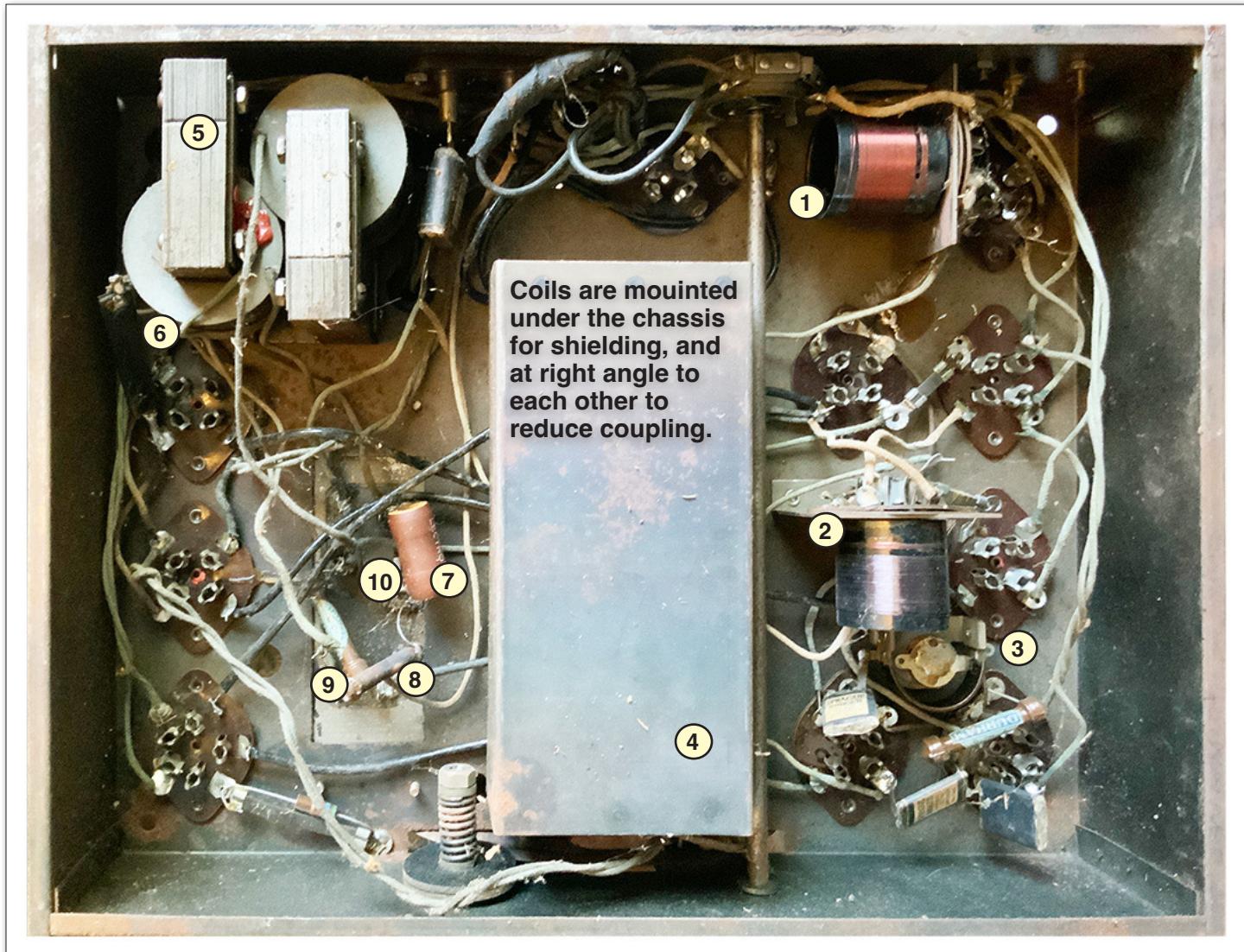
Type of coil installed on the Model 8 (2 on the top, 2 under the chassis)



Front view of chassis with tubes removed

The chassis is somewhat rusted but otherwise in decent physical condition. Log Scale Dial.

## Chassis Underside:



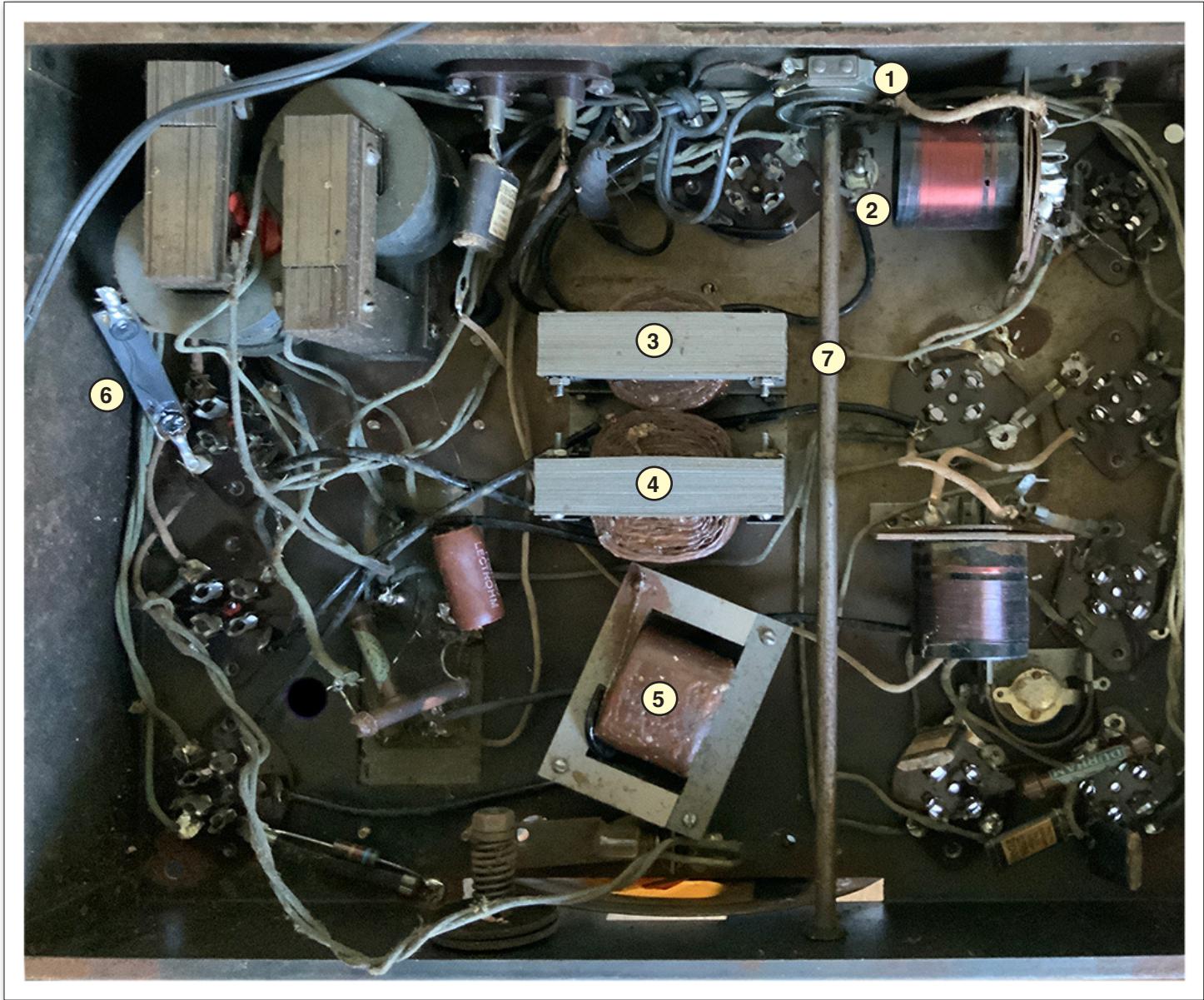
## Component Layout Guide:

1. First stage R.F. Coil
2. 2nd R.F. Coil
3. Regeneration Control
4. Audio Transformer cover (2.5" Deep) with 1/2" gap on the sides only.
5. Power Supply Chokes (Power Transformer & Filter Capacitors on the top of the chassis)
6. .8 ohm resistor - probably added or a factory fix? (close-up at left)
7. R.F. section resistor - now 336 ohms
8. Center Tap resistor now open.
9. 171A Filament transformer winding center tap good
10. Also now open

.8 ohm resistor close-up



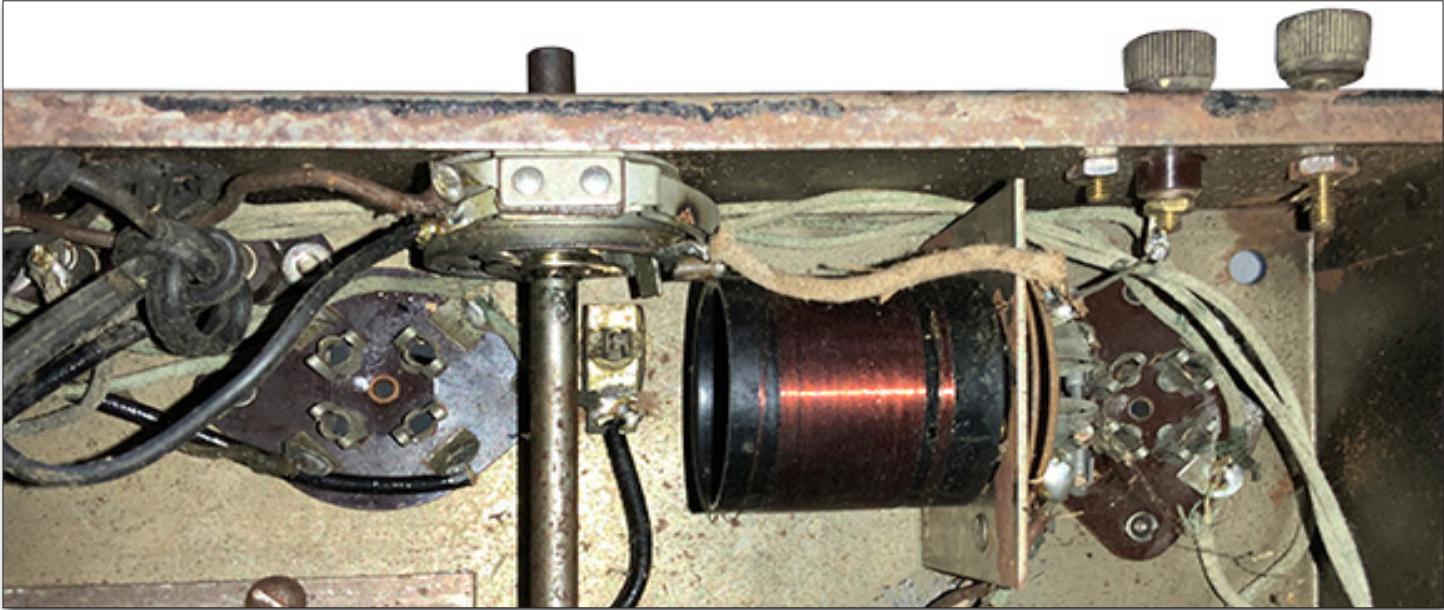
**Audio Transformer Cover Removed:**



**Component Layout Guide:**

1. Volume Control & Power Switch
2. Speaker field Output terminal
3. Push-Pull output transformer
4. Push-Pull driver transformer
5. Audio Transformer between detector and first audio stage
6. .8 ohm resistor - (enlarged on prior page)
7. Power/Volume switch shaft runs through the chassis (front to rear).

## Volume Control and Power Switch Details:



### Jim's Comments:

The combination power switch and volume control is mounted on the back, inside of the chassis. A shaft runs to the front of the chassis for mounting the control knob.

### Richards comments on the Volume/Power control:

The pot is mounted on back of the chassis in the normal manner. The shaft extension is connected to the back of the pot, so no control is needed on the back of the chassis. The pot and switch run backwards - counter clockwise rotation increases the volume!

They had to put the pot in the back of the radio, or shield the coils - they chose the latter solution. If they had mounted the pot on a bracket, facing forward, it would have had a conventional rotation.

They could have used an off-the-shelf shaft extension. Presumably much less expensive than a custom machined shaft???

### The Model 8 speaker:

### Jim's Comments:

The speaker is mounted to the top of the chassis by four screws. Disassembly is not advised beyond what is seen at right.

### Richards speaker comments:

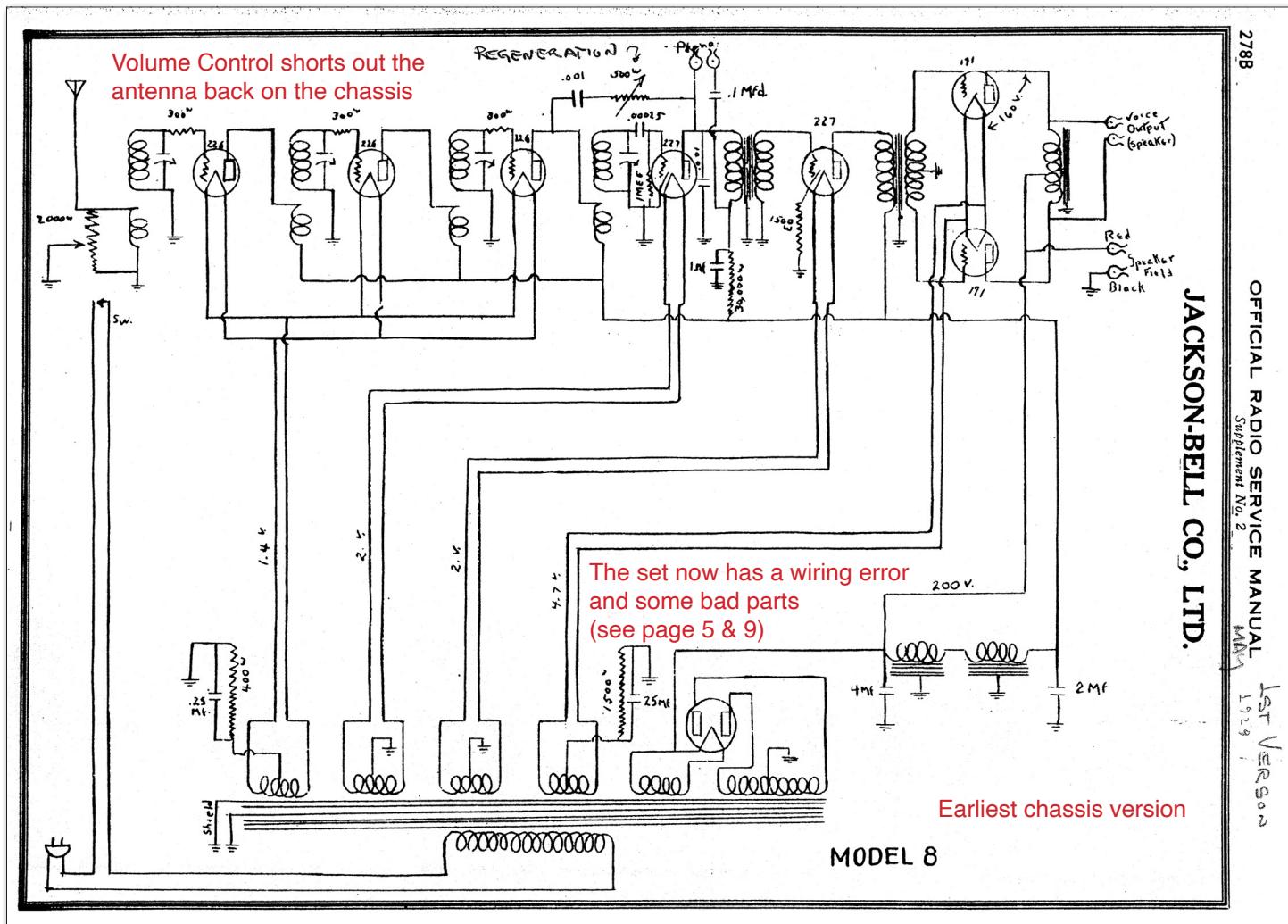
The set has an unusual speaker connection. The matching transformer is on the speaker. The push-pull transformer is in the chassis. Later styles combined the two transformers for a cost savings.

### Notable Speaker Components:

1. 250pF capacitor
2. Field coil wires
3. Audio wires



## Model 8 Schematic (Earliest Version):



This is the first of three different versions of the Model 8. The other two are the Model 845 & 845S.

### SUMMARY:

No attempt was made to play this radio. No repairs were attempted. This is a very heavy set and a nightmare to service.

However, Jim did extensive dismantling and took many photographs. He also did a few resistance measurements.

### Conclusions...

As found, this set would not work.

In the past, someone attempted repairs, and made some bad choices. The technician had no schematic and was unfamiliar with this type of circuitry.

Several of the old resistors had opened, and attempts were made at repairs. The values that were used for bridging bad parts do not match the schematic values. In addition, some bad (open) resistors remain.

A wiring change was made, attaching the center tap of the audio driver transformer to one side of the filament line. This was not a good idea.

Fortunately, it is easily moved back to where it belongs. Jim measured the resistance of the transformer winding. It seems correct.

There is a 0.8 ohm resistor in the filament lead of the 171-A's. This does not appear on the schematic. However, factory fixes are common. Alternatively, this may have been someone's attempt to fix the other problems.

With a minor amount of effort and parts, this set should be able to be put in working order.

### Bad Choice Engineering Design Features:

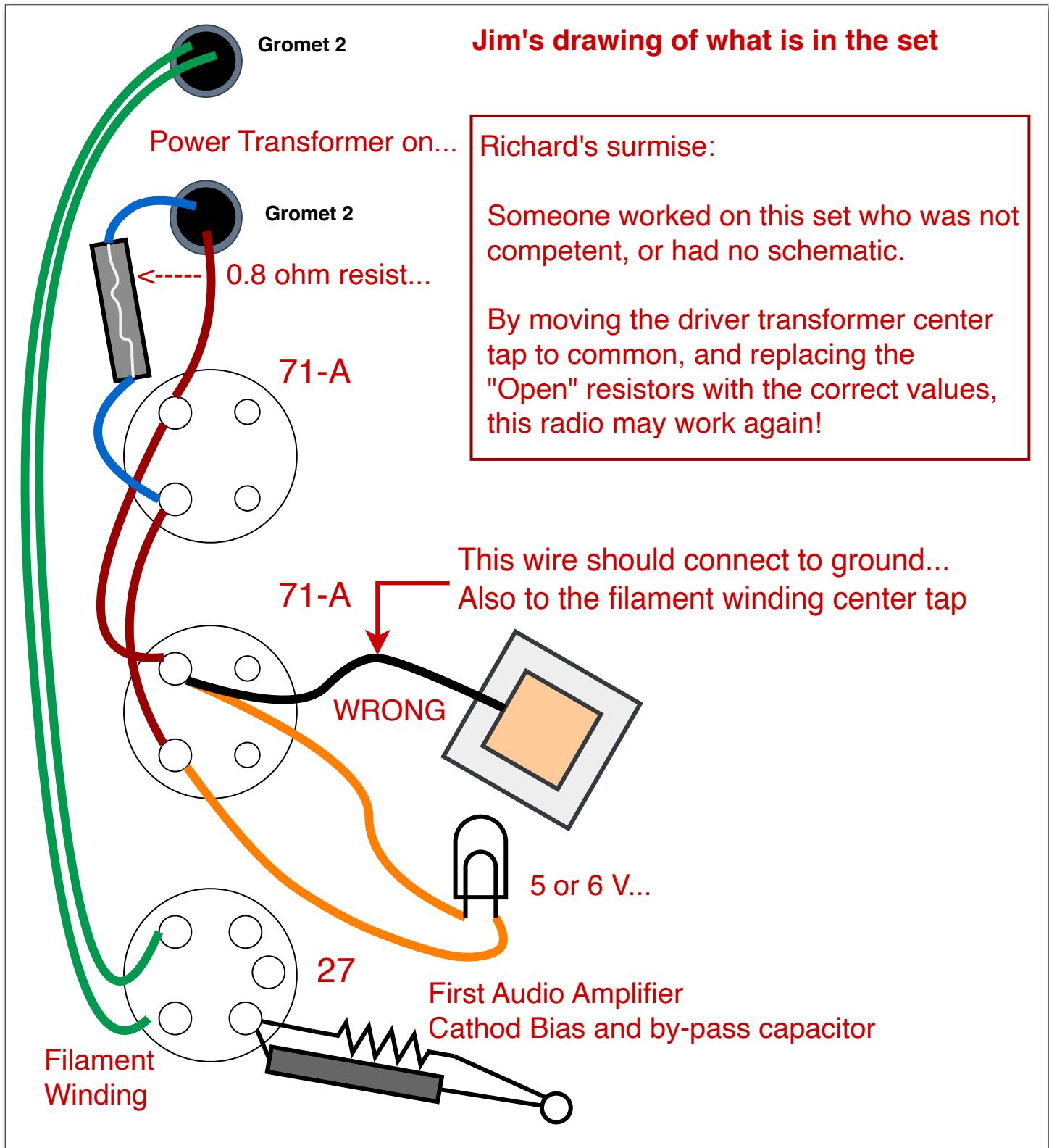
As a guess, Jackson-Bell did not want to pay the Nuetrodyne Patents. As a result, the low gain R.F. stages are followed up with a little regeneration to increase the gain.

The unshielded first stage R.F. coils are under the chassis. So, the entire chassis needs a metal pan for shielding. This seems like an expensive trade-off.

## SUMMARY Continued...

The volume control pot shorts the antenna; a common method in other period Sets. Jackson-Bell chose to machine a special shaft out the back on a standard control. This was expensive and the control turns backward from the convention of the day (or now)! A bracket and a conventional shaft extension would be a better and cheaper solution.

## Restoring This Radio's Functionality...



## SUMMARY Continued...

### Later Chassis Versions and Advertisements

Jackson-Bell continued making this set through 1930. There were two updated versions; most notably with 45 output tubes, which would be presumably much louder.

Only two examples of this model set are known to exist. This is not surprising. This set was obsolete in performance within two years of its introduction.

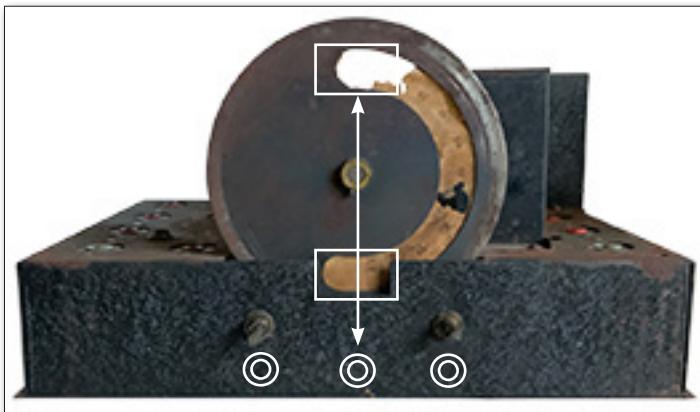
### Possible Console Adaptation:

The Model 8 has two controls on the front of the radio. One is a power switch with volume control, the other is frequency control for choosing stations.

Advertisements for consoles show three controls which may have included a tone control. A suggestion of how this was accomplished is in the accompanying image below.

This would have required modifications to the chassis and how the tuning mechanism was driven. The table model control uses a side drive, while a center dial drive would contact tuning directly below.

The dial window placement (ecutchen) would be higher for the console than for the table model.



Volume Control      Center Dial      Added Drive Knob      Tone Control

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A NEW ALL-ELECTRIC RADIO

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Receiving Set---6 and 8 Tubes

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UP TO **\$134.50**

PRICES INCLUDE DYNAMIC and SPEAKER TUBES

**YOU CAN BUY NO BETTER**

**BECAUSE**—It has tone quality. Jackson-Bell engineers have accomplished this through a special device which lowers and raises the pitch of the voice or instruments, to please the most exacting ear. Do not buy any Radio before you have seen and heard this great invention. Remember—Tone is important.

**QUALITY DISTINCTION IN EVERY CABINET**

**1.** The Cabinets are the last word in Cabinet maker's art, the inlaid genuine tapistry lends an atmosphere to a home not obtainable in any other design.

**2.** Only the best standard parts are used in the construction of these receivers, which are manufactured under R. C. A., Hazeline and LaTour patents.

**3.** Nothing has been spared in the development of these Receivers, they embodying the last word in performance and beauty which qualifies the most discriminating buyer seek and which are found in the new creations.

In keeping with the position we have attained, leaders among manufacturers of Radio equipment after a long period of experimenting and research, Receivers which far exceed in performance and quality, all others offered in their price range.

We have reached to great heights in making it possible to place in the home these receivers at such a low cost.

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MEYER RADIO CO. 904 Telegraph Ave.	WHITE ELEC. CO. 3226 Shattuck Ave., Berkeley
F. C. SAXE 3325 Lakeshore Ave.	GARRETT OWEN MUSIC CO. 3350 Adeline, South Berkeley
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CONSULT YOUR NEAREST JACKSON BELL DEALER FOR A DEMONSTRATION. HEAR IT.

ONE OF THE FIRST ALL ELECTRIC LOW PRICE RADIOS "SINCE 1926"

### Jackson-Bell Model 8 Advertisement

Oakland Tribune - Oakland, California - 12 Sep 1929, Page 26