

# RESTORING THE 1948 MEISSNER 8C "RECEPTOR" FM TUNER\*



\* Video of restored operation is on the CHRS website.

<< Note Channel Numbers 200 to 300

A presentation by  
Bart Lee, K6VK for the  
California Historical  
Radio Society, © 2017

**AND MANY A MISTAKE ALONG THE WAY!**

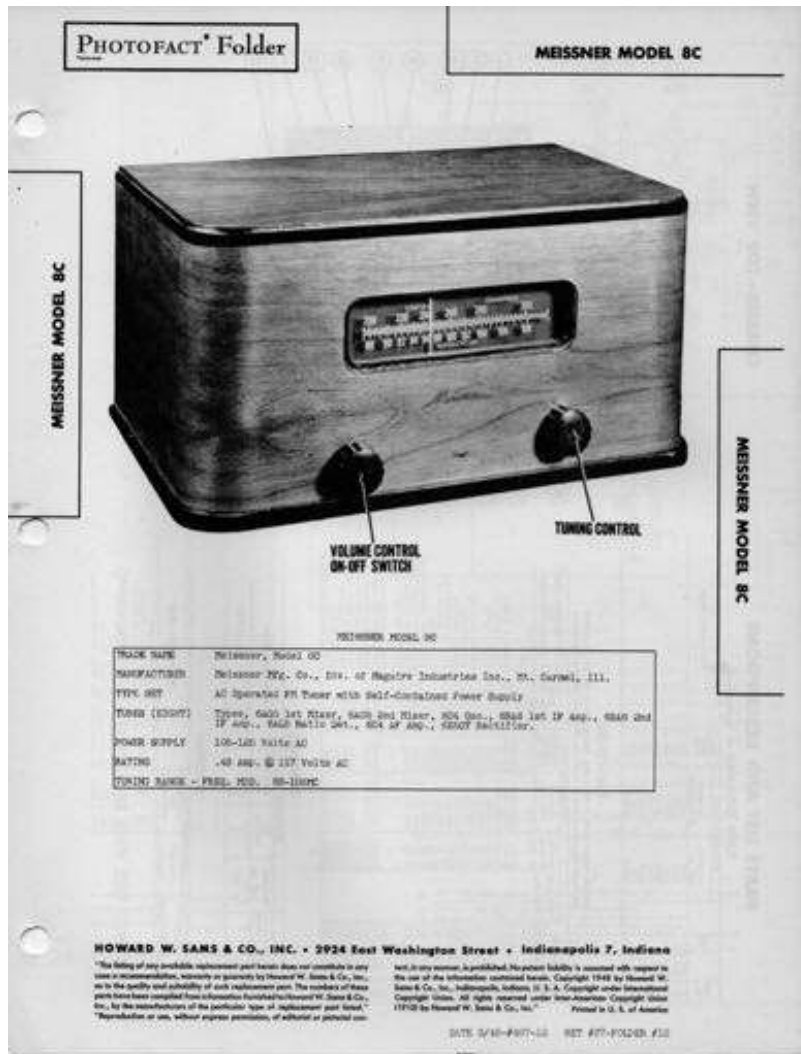
# MEISSNER MFG. DIV., MAGUIRE INDUSTRIES, INC.

Sixty three radios and types of parts (1937 to mid-1950s) are listed for the radio manufacturer Meissner Mfg. Div., Maguire Industries, Inc. (Mt. Carmel, IL) by [www.RadioMuseum.org](http://www.RadioMuseum.org). The product line included test equipment and kits. The 1937 radio was a communications receiver for hams and SWLs.

A war-profiteering wheeler-dealer named Maguire, as Maguire Industries, in order to get into the radio business after World War Two, bought and merged Meissner with Thordarson, also newly acquired. (From *Tommy Gun: How General Thompson's Submachine Gun Wrote History*, By Bill Yenne (2009)). Meissner also sold radios, at least as of 1946, under the Brewster trade name.

Whether the Meissner radio company ever had any connection with German radio pioneer Alexander Meissner cannot readily be determined. See [http://ethw.org/Alexander\\_Meissner](http://ethw.org/Alexander_Meissner) .

# Meissner 8-C Documentation:



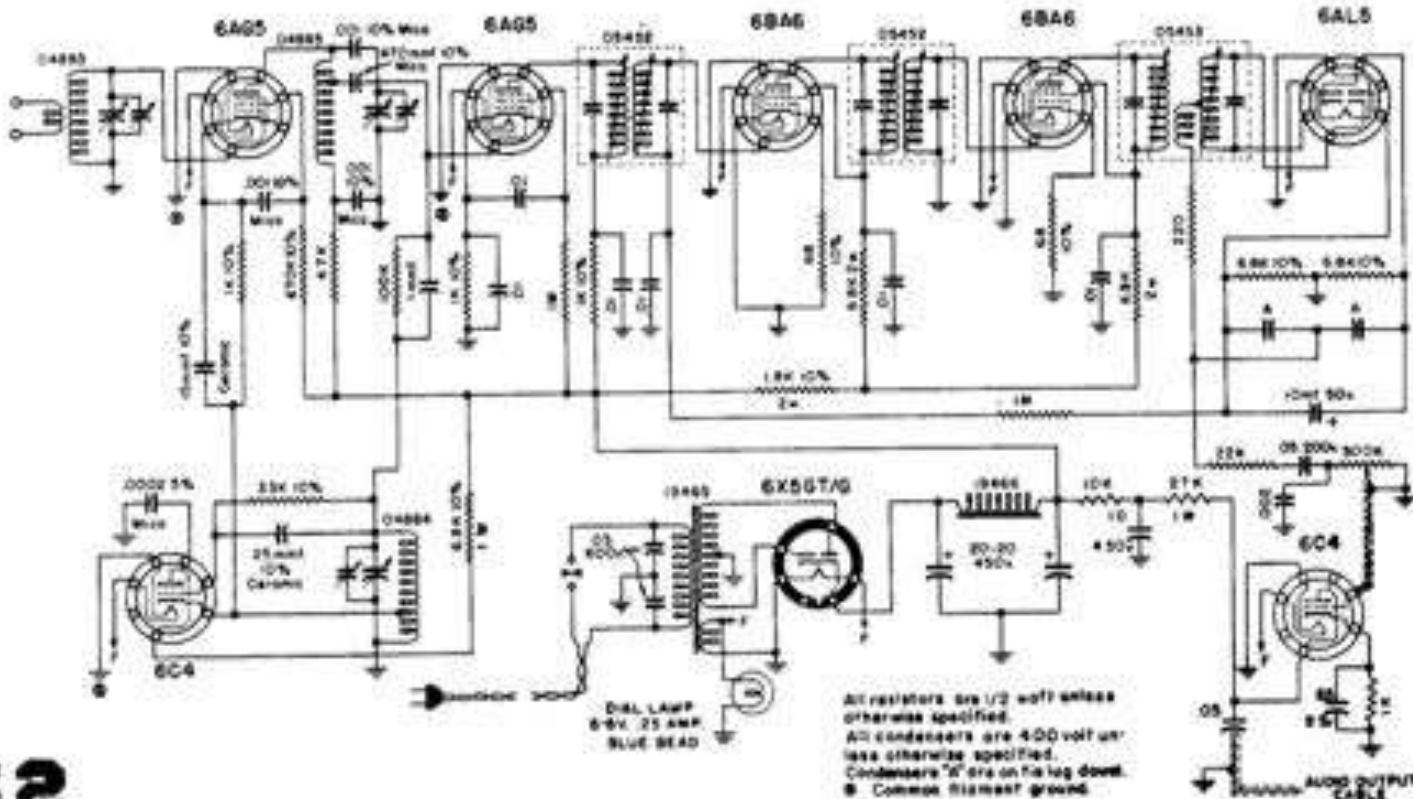
On the Face of the Tuner:



# This FM Tuner Uses 7 Miniature Tubes

Meissner Model 8-C FM Tuner Tube Compliment

Rectifier	RF	Osc	Mixer	IF	Det/AVC	Audio Output	Rider's Manual Page #
6X5GT/G	6AG5	6C4	6AG5	2 X 6BA6	6AL5	6C4	17-1



From *Most Needed Radio Schematics* (1949)



# The Cabinet Is Plywood, Veneered With The Two Corners Scored And (Steam) Bent:



# Masking Tape (Fossilized) Once Perhaps Held A Back Cover On The Tuner:



# A Solvent And A Scraper Got The Tape Off:



Needless to say, the tape had to be soaked for a while and the scraper wielded with considerable delicacy. The WD-40 did no damage to the finish. The cabinet now seems restorable; on to the guts!

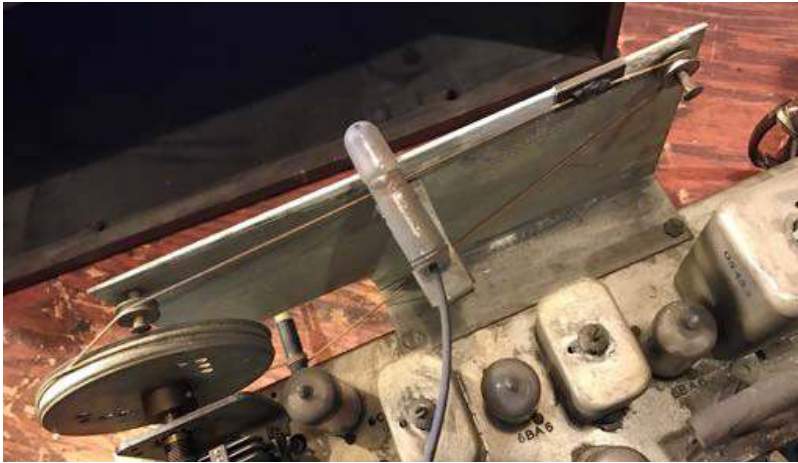
# **A LETHAL SHOCK HAZARD:**



**Inspect for safety!**



# Cleaning The Chassis With 90% Alcohol And Cotton Tipped Sticks:



Decades of Dust and Tobacco Tars!

Use a Solvent? Use Hot Water?



Test the Solvent on a Tiny Bit of Paint First!

# Photograph The Dial-Stringing – Just In Case!



# Examine Under The Chassis For Issues And Catalog The Parts:



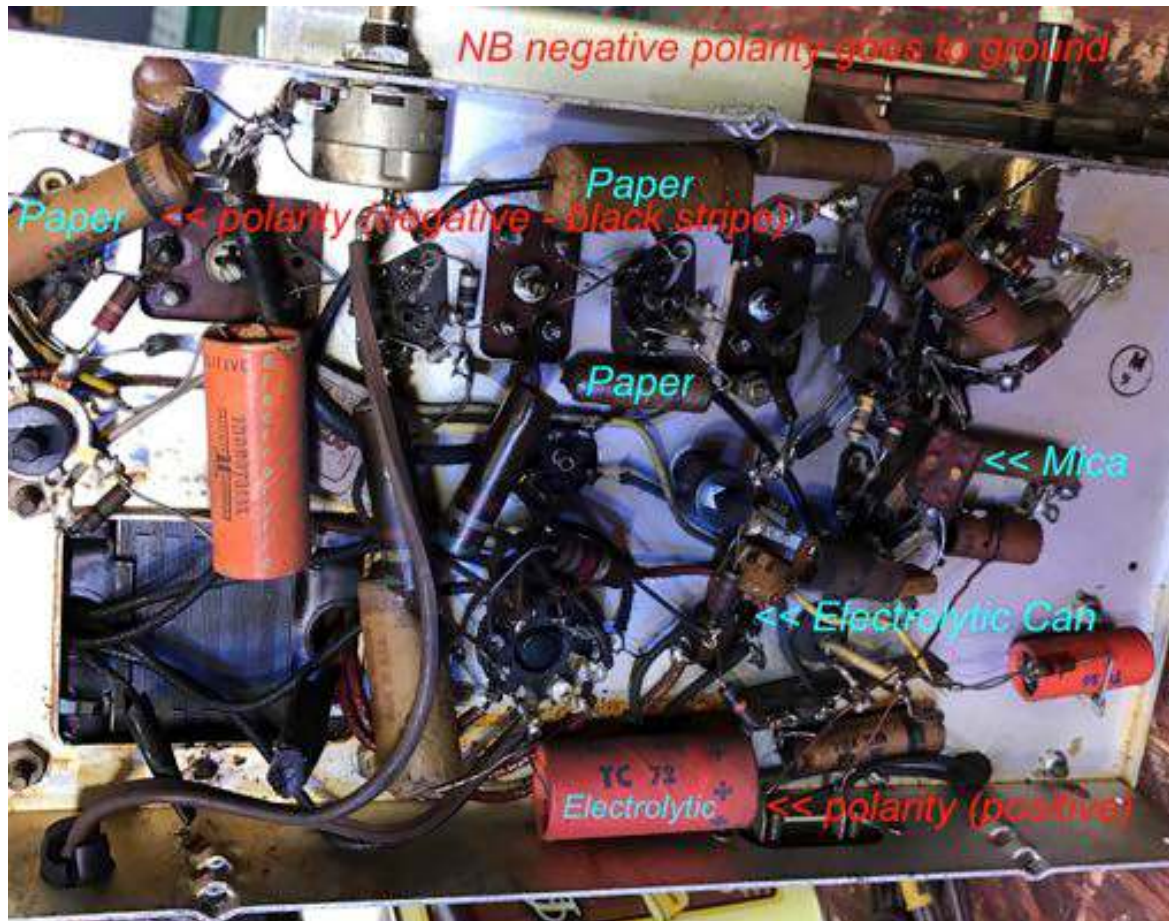


# Is Overheating An Issue? The Cap Is Surely Bad; Is The Resistor?





# Caps Identified:



# Inventory All Caps; Identify on Chassis and Verify on Schematic :

Meissner 8-C FM Tuner 1949  
Capacitor Inventory 06 I 16 K6VK

Electrolytic 3 orange  
10 mfd @50 v  
10 @450  
25@25

Paper  
From top right  
.002 mfd @ 600v  
0.05@400  
0.05@600  
0.05@600  
0.01@600  
0.05@400  
0.01@400  
0.01@400  
0.01@400

Ceramic 0.01 @?v Mica 0.005. Plus

Dot mica five; numbered now on schematic  
4 Rectangle arrow longwise center; 3 are yellow

#1 One side arrow at front  
Top red dot red body  
Down arrow red green orange  
Other side red orange red  
Schematic says  
0.0002@5%  
From 6c4 pin 5 to ground  
6c4 towards front near var cap

#2 Yellow body  
Left of down arrow  
Blue gold red  
Blue purple blue  
0.001@10%  
Across pins 2 & 6 1st 6ag5  
Oo

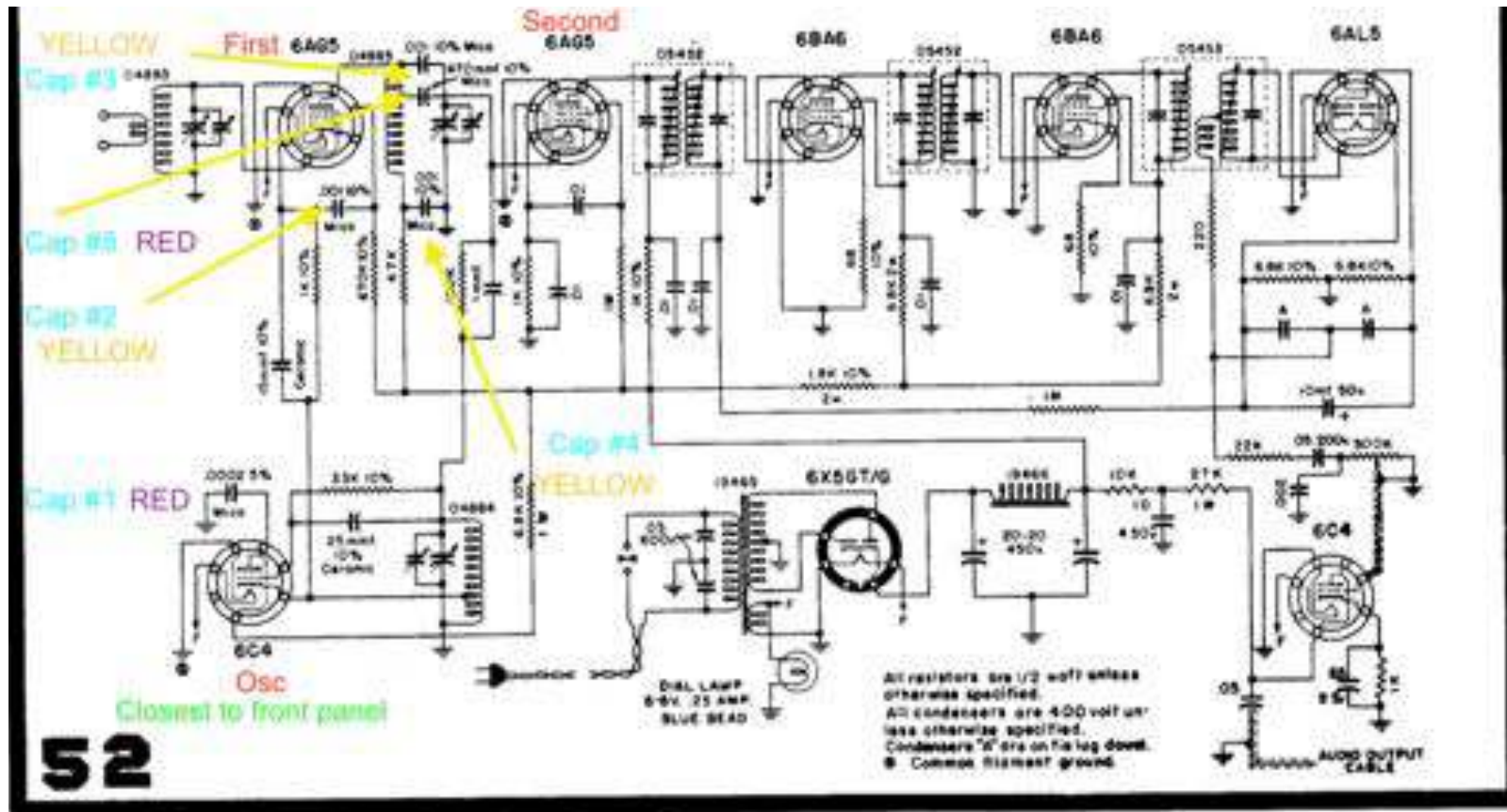
#3 Yellow body  
Left of down arrow blue yellow red  
Right: blue brown blue  
Pin 5 1st 6ag5 to var cap  
Oo

#4 Yellow body  
Left of down arrow  
Blue yellow red  
Right of arrow  
Black yellow black  
0.001@10%  
Goes to ground from coil  
Oo

#5 Red body high  
Left of arrow red orange brown  
Right: green yellow purple  
Schematic says  
470mmf@10%  
From pin one 2d 6ag5  
Oo

**NB: the values of old Mica caps are very hard to read!**

# Locating And Getting Values For Mica Caps (and hoping they'll be good):



Mica caps are usually still good;  
at least many paper caps are usually bad.



# Mica Caps, Color-coded, Read By Arrow:



So, what are the two bottom colors on this one?

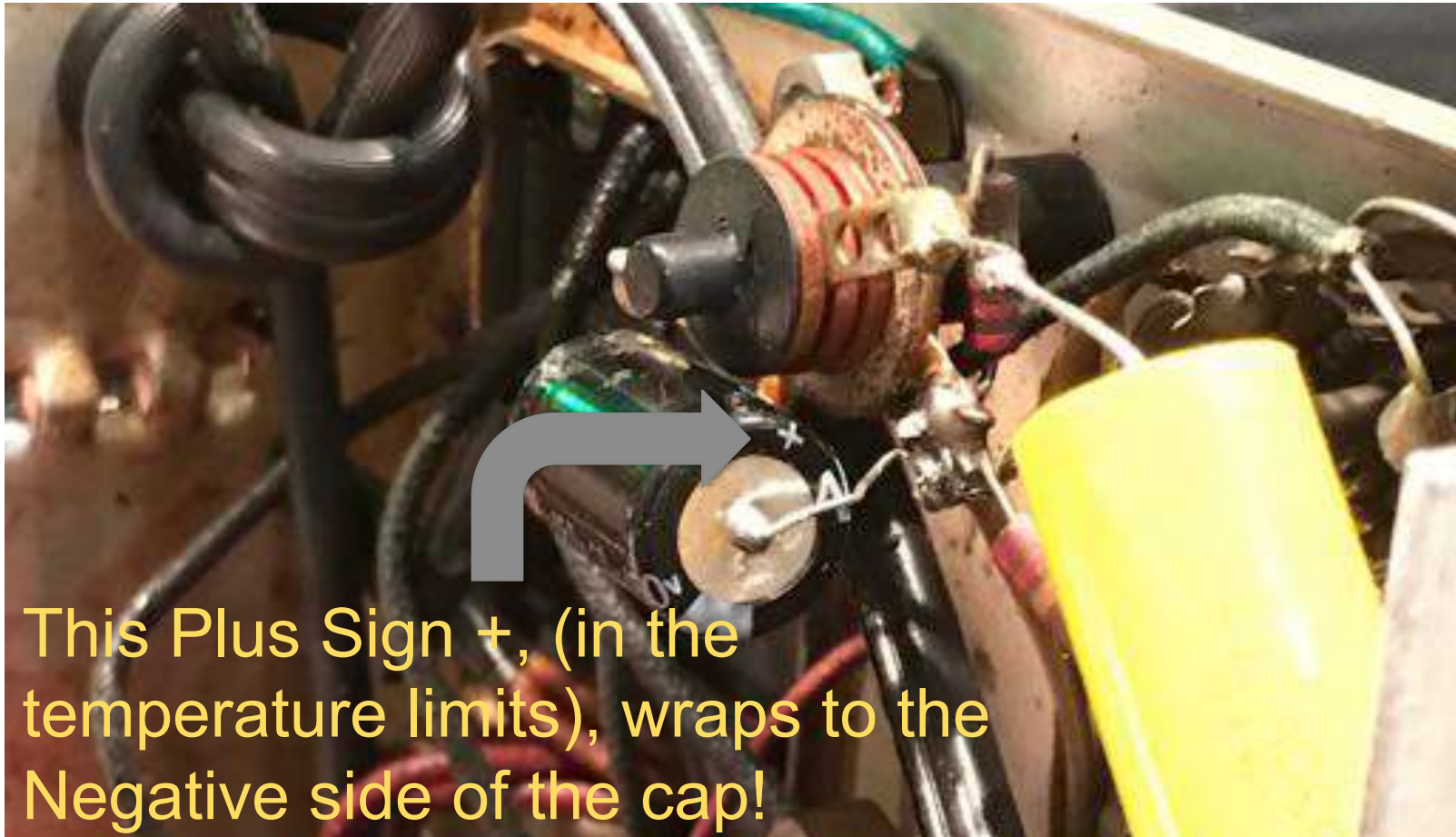


What arrow?

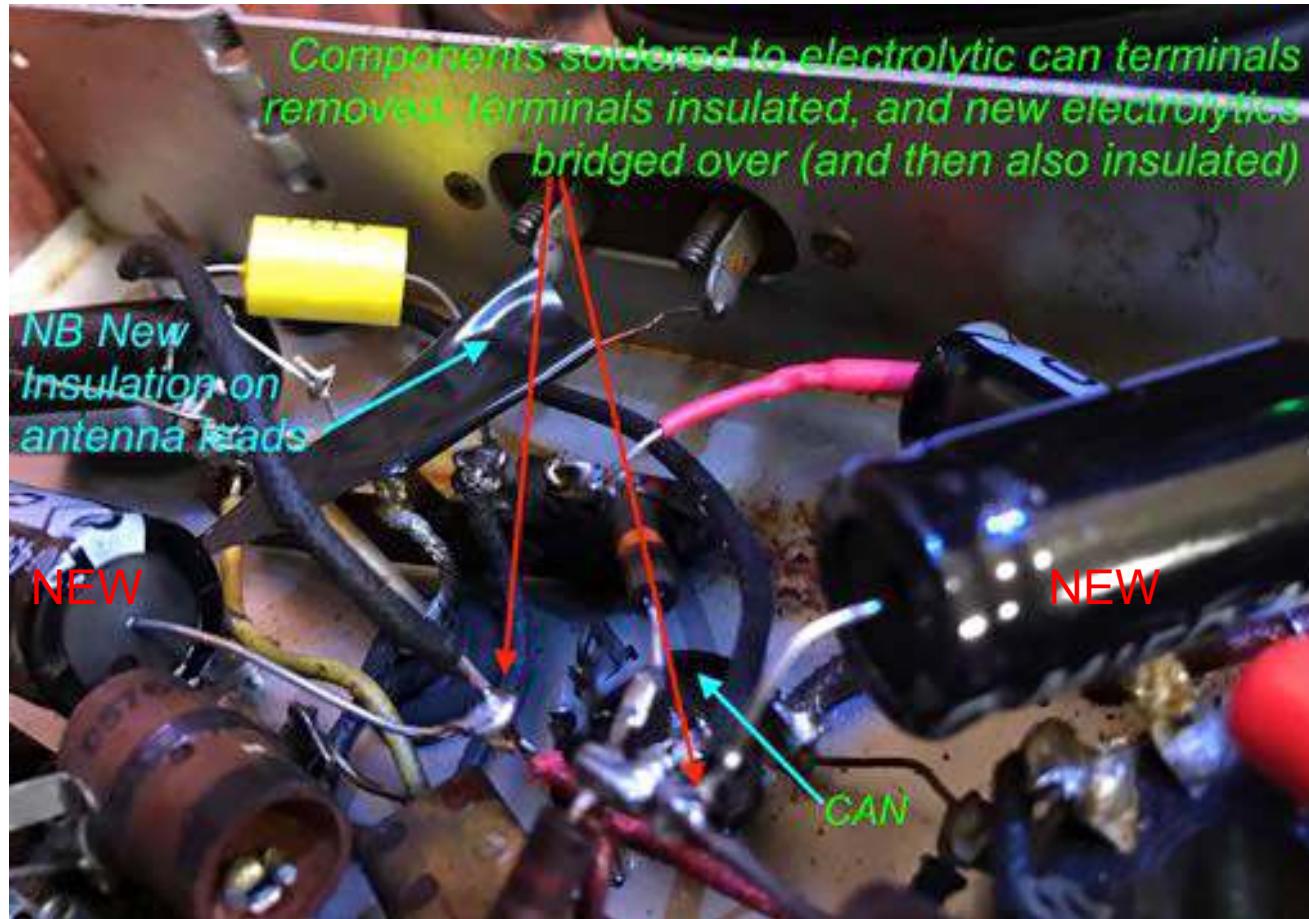
And, what do the **colors** mean, where, in 1948?  
**It's best to go by the schematic.**



# Replace All Electrolytic Capacitors but Beware Ambiguity!



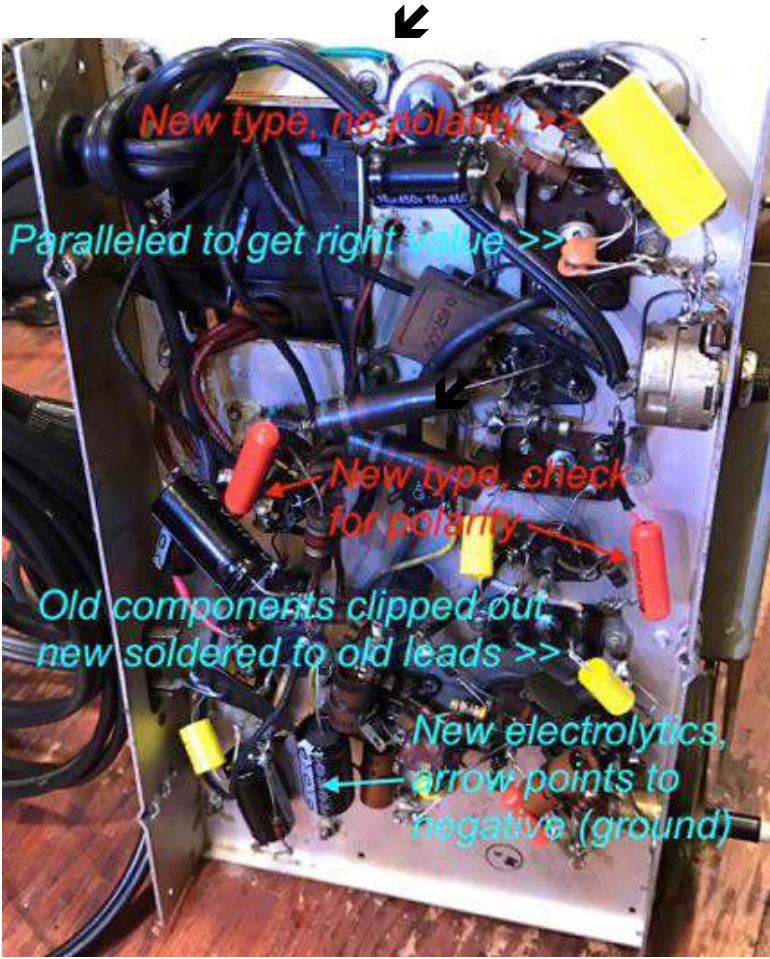
# New Filter Electrolytics Bridged-in Over The Old Can:



Various insulations applied after replacement.

# Re-capped:

But note the new three-wire linecord at the top; when the chassis was thus grounded, hum was introduced into a nearby radio. So, a polarized two-wire line cord was used.





# A New Polarized Linecord Inserted, Hot To The Switch:





# Some Resistance Is Futile: This Resistor Is Open And Unconnected On One Side:



This and other evidence suggests this tuner has been worked on before...

# Success: The Tuner Works Just Fine! A nice warm sound...



But then I broke the 70-year-old dial-string by turning too hard at 108 MHz! So, I re-strung it with braided fishing line. This worked well. (In the photo, the old string lies on the control.) The earlier photo of the original dial-stringing came in handy!

When I broke the dial-string, my self-castigation, coded in obscenities, could likely be heard quite far from my bench!

# Re-finishing The Cabinet:

I touched-up the black edging with black primer on a cotton swab, and then used wax. Kiwi shoe polish actually works best.



This cabinet appeared to have been refinished in the past, because some little edge chips had a finish over them but others did not. The present finish looks like polyurethane. The gunk on the chassis suggested prior residence in the home of a smoker, (confirmed perhaps by the residue on the polishing cloth). So I used **Restore-a-Shine**, which is mildly abrasive.



# Save The Decal; Rub Off The Schmutz And Grime:



# Cleaning The Outside Of The Dial With A Cotton Swab And Warm Water:



Trying to clean the inside, paint-side, of the dial puts the markings at risk!

# The Working Meissner 8C Tuner In Its New Home: Great Sound!



A discone antenna on the roof provides the signals; a 1957 Masco amplifier sends the audio out to a big speaker and it sounds really good as a vacuum tube audio chain!



# The Chicago FM Station List Taped To The Front; WLS Came On The Air With These Call-letters In 1964:



FM STATIONS		
WNTZ 88.1	WDHF 95.5	WCLM 101.9
WATH 88.5	WDBM 96.5	WDMR 102.7
WNUR 89.3	WNIB 97.1	WEEF 103.1
WMBI 90.1	WSDM 97.9	WKFM 103.5
WBEZ 91.5	WRSV 98.3	WJJD 104.3
WYCA 92.3	WFMT 98.7	WEAW 105.1
WNWC 92.7	WEPN 99.3	WAFM 105.9
WXRT 93.1	WFMP 100.3	WELF 107.7
WEBH 93.9	WMAQ 101.1	WNUS 107.5
WLS 94.7		

Meissner was an Illinois company.

# If Need Be, Diagnostics Are Available:

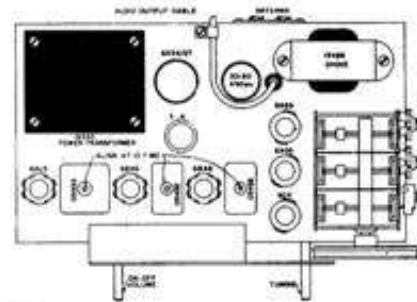
## MANUAL OF 1949 MOST-OFTEN-NEEDED RADIO DIAGRAMS

### Meissner F.M. Receptor, Model 8C

Intermediate Frequency - 10.7  
megacycles

Tuning range - 88 to 108  
megacycles

Voltage Chart - The voltages tabulated in the table below are the correct voltages which should be measured between the socket terminal and chassis with nominal line voltage and no signal. All voltages measured with a high impedance voltmeter.



VOLTAGE CHART

Terminal Number	1	2	3	4	5	6	7	8
6AG5 1st Converter	0	2.1	6.3V RMS	0	260	63	2.1	
6AG5 2nd Converter	0	1.2	6.3V RMS	0	270	37	1.2	
6C4 Oscillator	184	0	6.3V RMS	0	184	—	0	
6BA6 1st I.F. Amp	-0.4	0	6.3V RMS	0	95	95	0.95	
6BA6 2nd I.F. Amp	0	0	6.3V RMS	0	84	84	0.95	
6AL5 Detector	0	0	6.3V RMS	0	0	0	0	
6C4 Audio	105	0	6.3V RMS	0	150	0	3.4	
6X5GT/G Rectifier	NC	0	240V RMS	Tie Point	240V RMS	Tie Point	6.3V RMS	287



# The Meissner 8C and a Thordardson Amp Sold Together In 1948; And Another Set is Still Together Today:



<<From Popular Mechanics, Feb. 1948, p. 229, a press-release article.



From E-Bay >>





# **Meissner Pre -WW II “Receptor” Covering the Old Armstrong FM Band of 40 – 52 MHz, Model 9-1053:**



These pre-war FM radios are great to listen to today, in California, because the California Highway Patrol uses the band today and the wide-band reception of the broadcast circuitry permits all CHP stations to be heard at once.

# Please Add More Information!

Corrections, suggestions and amplifications are welcome. Send to:  
[KV6LEE@gmail.com](mailto:KV6LEE@gmail.com).

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See [www.californiahistoricalradio.com](http://www.californiahistoricalradio.com)

73 de Bart, K6VK ##

