

Radiola M 55
SVENSKA RADIOAKTIEBOLAGET
Stockholm, Sweden
Circa 1927 - 1929



1927 Advertising Cut

From the collection of Robert Lozier

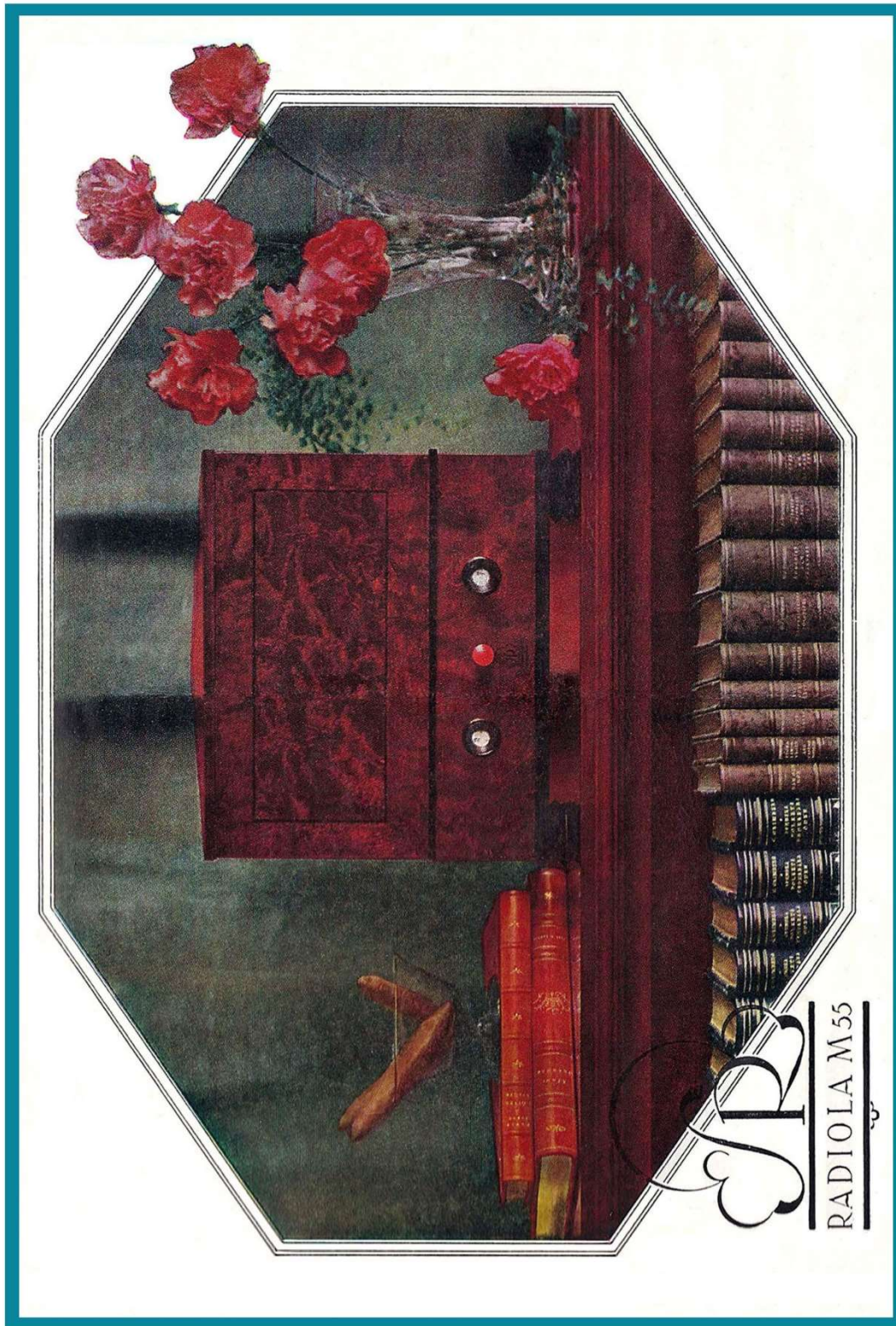
Monroe, NC; USA – kd4hsh@carolina.rr.com



Bell Flower motif cabinet added to my collection 2017.

**Walnut finish with rare example of a stock cabinet with marquetry inlay;
not machine-made decorative inlay strips.**

**Note: Veneer orientation in this advertising cut is vertical while my
example is horizontal. Other surviving examples show a horizontal grain
orientation.**



Cut from 1927 brochure.

Burl Mahogany motif cabinet added to my collection 2019

Swedish Radio Company (Svenska Radioaktiebolaget a.k.a.- SRA)

The company was founded in 1919 in Stockholm by AGA, LM Ericsson and ASEA, with the goal of developing radio technology. In 1921 British [Marconi](#) Company became a minority owner thus giving the company access to important patents. From May of 1923 the company engaged in experimental broadcasting (generally 2 hours per day). In 1925, the government established a broadcasting authority "Radiotjänst" (the Radio Service) and "Telegrafverket" (the Swedish Telegraph and Telephone organization) acquired the sole right to operate broadcast transmitter sites. The former "radio amateur" operators for the aforementioned experimental broadcasts now became employees of Telegrafverket. All now financed in part from licenses paid by citizens for the right to own and operate a radio receiver.

SRA launched its first receiver, a headphone only model M 15, in early 1923. The receivers were sold under the brand *Radiola*. (No association with the *RCA* owned brand name. The brand having been registered in Sweden only hours before an *RCA* representative submitted an application.)

The three valve Model M 55 shown here for loudspeaker operation and a Model M 52 two valve set for headphone only reception were designed in 1926 for release in early 1927. Swedish historian and collector, Bengt Svensson, comments that while there are a number of the M 55s in collections, he has never seen the two valve M 52 version.

In 1927, Ericsson became the principal owner of *SRA*. The first *Radiola* with built-in loudspeaker came in 1928. From 1929 on, new radios were available for operation from your choice of DC or AC mains power. 1939 launched the first portable *Radiola*. It had to wait on success until after World War II when people began traveling more. 1958 saw the first transistor radio in the *Radiola* series.

The principle owner of *SRA* in the early 1960s, Ericsson, concluded that radio and television manufacture should be sold off to AGA in 1964 so that they could concentrate on telephony and communications. *SRA* continued to develop radio for mobile communications. In 1978 the

company was bought up by Ericsson and thus contributed to its success with mobile telephony.

The Radiola M 55 of 1927 on exhibit here today....



← Predecessor valve sets such as this Model M 30 offered very tidy layouts but quite utilitarian in their cabinet design.

↓ However, this three valve Model M 55 receiver presents a radical departure from that lineage, offering an elegant compact cabinet of distinctively Nordic design sensibilities, with no apparent equivalent design from any other manufacturer.



There were three variations of this cabinet. One with this checkerboard marquetry scheme in Baltic Birch, a version finished in Mahogany veneer with a highly figured Mahogany front panel inlay and Walnut veneer version with marquetry inlay motif of two Bell Flowers. This radio was described as the “housewife’s radio” because it was said to fit nicely into any home décor.



Note that the center version of the cabinet pictured on the previous page does not show the tuning and volume control knobs on the sides of the cabinet. This is in keeping with the 'housewife radio' simplicity concept. 'Dad' could tune the radio to the desired station and store the knobs on this little shelf along with the shorting

plug used to turn the radio ON; thus insuring that the radio did not get out of adjustment!

In 1927 the horn type loudspeaker was losing favor to the free edge paper cone loudspeaker driven by a vibrating reed or armature. So either type of speaker could have been chosen by the original owner. The advertising brochure recommended the "*Amplion Kon*" (cone).

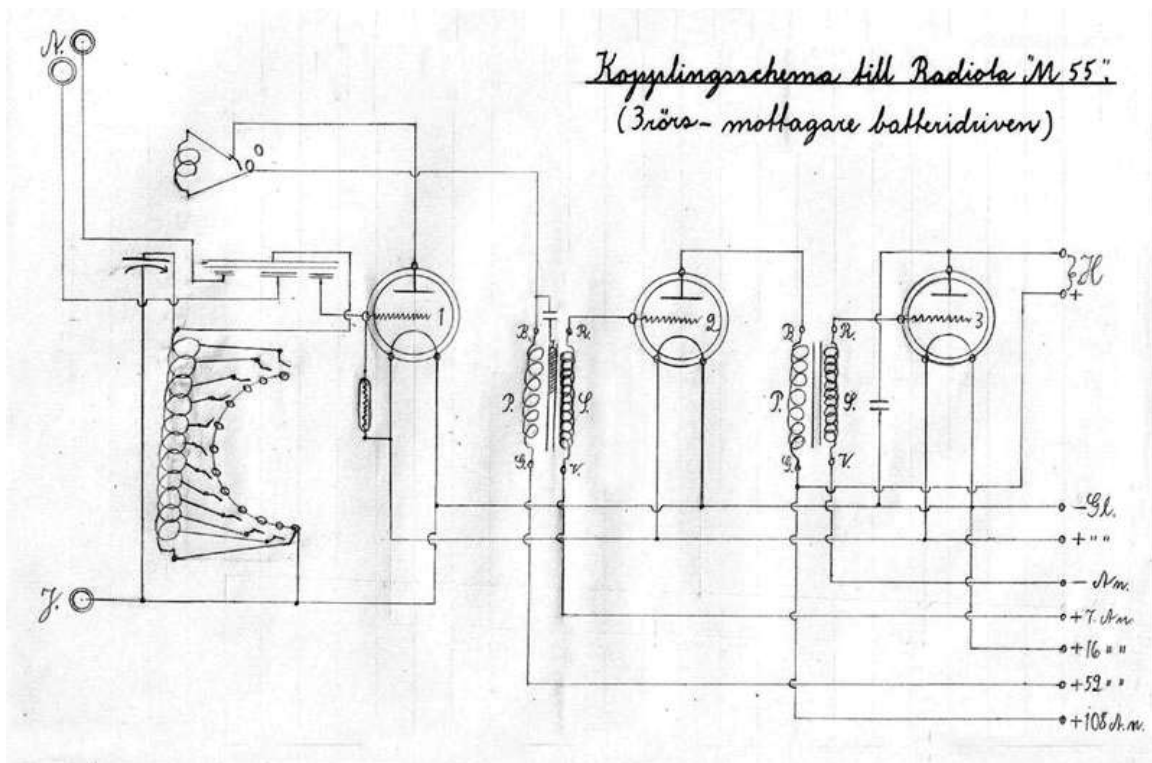
I do not have a horn or cone speaker of Swedish manufacture in my collection. The Swedish market of the day had a significant percentage of import radios and accessories from Germany and England in particular. The German made GRAWOR "*Melodia*" cone speaker on display here was definitely popular and available for sale in Sweden circa 1927.



These radios were well suited to the broadcast radio system of the nation at this time. In Sweden, as in most nations, state managed broadcasting authorities were responsible for producing program content in the 1920s on into the 1950s. There was generally a national program and a few large cities would have an additional studio and transmitter for local programming. Therefore, there was no real need for the majority of households to own a receiver with highly selective or

sensitive radio circuits just to bring in broadcasts in your native language. However; over time, a more adventuresome minority of listeners began to show interest in having radios capable of better performance for receiving foreign broadcasts.

This receiver features a regenerative detector with a single parallel tuned circuit coupled to the antenna by your choice of two small value capacitors of a most unusual construction. The parallel tuning condenser is a maximum 220 pF. and the tuning coil has 11 taps. A shorting plug is inserted in one of the 11 tap holes to establish a basic tuning range; the bottom end of the coil thus being shorted out. The tuning range is from 140 to 2100 M. The regeneration coil rotates in the usual fashion at the top end of the tuning coil. For local stations, the minimum amount of feedback provided by this coil may not be low enough to prevent oscillation. The solution was to provide for another shorting plug that could be inserted across the leads of the feedback coil to kill the signal altogether for local reception.



There is an interesting 'gimic' capacitor wound over the insulated grid wire connection for the first audio amplifier. The gimic wire is connected to the grid of the second audio amplifier. This device is present in both

chassis I have examined but not shown on the schematic. I suspect that the phasing of the connection is such as to suppress high frequency ringing.

Back to the unusual antenna coupling capacitor... It is a length of brass tubing wrapped with a sheet of mica. On top of the mica, three windings of about 26 AWG wire are wound. Just one end of each winding is brought out from each coil. Thus they are using this winding not as a current carrying inductance but simply as one plate of a capacitor, the other plate being the brass tube! The third winding (capacitor plate) provides capacitive coupling from the tuned circuit to the grid of the detector tube.

You were given the option of purchasing 2 or 4 Volt filament triodes for dry cell or storage battery operation. The maximum operating voltage for the two audio amplifier stages was 90 Volts. This voltage could be provided by a single 108 Volt battery. These batteries had a large number of voltage taps near the negative end of the battery. In this fashion, these taps could be used to provide grid bias connections; such that the 16 Volt tap was connected to the filament circuit where we would have connected our 'B-'.

This scheme, although it made for a more compact battery arrangement, was not making the best use of battery capacity. Since the grid bias current was extremely low, you had up to 10 cells in the battery pack that were giving up only a very small percentage of their Ampere/Hour capacity by the time cells working in the plate circuits were fully depleted.

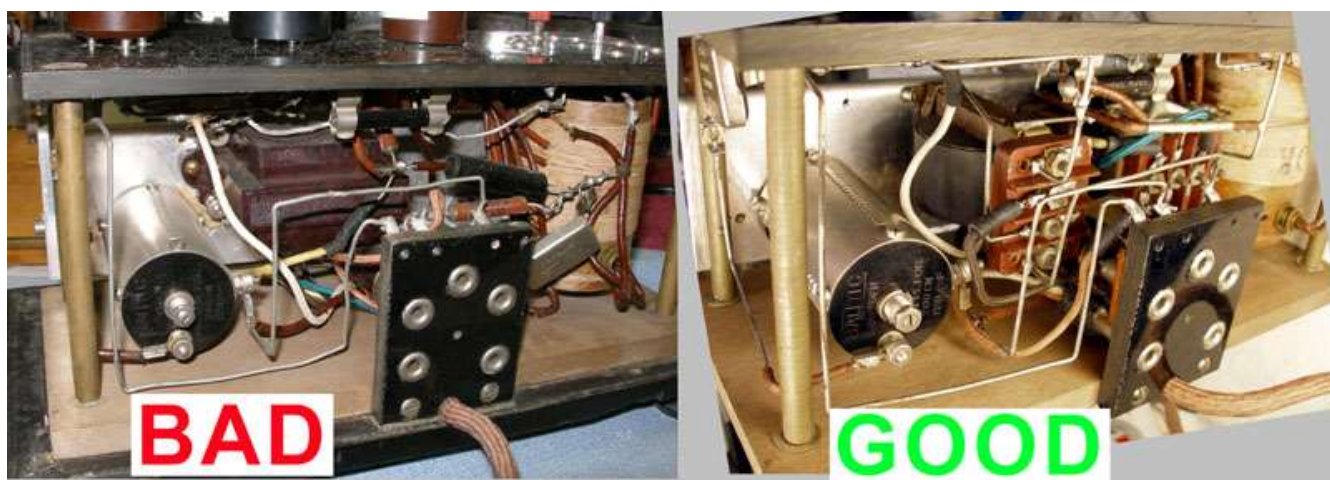
How I acquired and restored this M 55

I have attended the annual conference of the Antique Wireless Association near Rochester, NY every year since 1973 (except 1986 due to back surgery). In 2012, Bengt Svensson, from Stockholm gave historical presentations at this conference on radios and radio activities in Sweden. When he showed photos of the M 55 in all three of its cabinet variations, I was stunned by the unique design and immediately inquired about the possibility of obtaining one. Bengt told me that these

radios were not all that common but do occasionally appear for sale. I told him to please notify me should one turn up.

In June of 2013 Bengt finds a photo listing on a Swedish auction house web site and we decide that I will bid up to about \$250 US equivalent. There are only external photos that show the cabinet missing a piece of wood trim and two small pieces of Birch veneer. Some of the marquetry checkerboard pieces appear to be curling around the edges; all things I feel confident that I can correct. I am delighted when Bengt informs me that the closing bid is only \$140 US equivalent. Bengt kindly picks up the radio in person from the auction house and then brings it in his luggage to the 2013 AWA Conference.

In his hotel room we unpack the radio and I am delighted to find that the missing wood strip was inside the cabinet. We proceeded to remove the cabinet to examine the chassis and my heart sank. I had seen a few low resolution photos on *radiomuseum.org* of the chassis and could see immediately that the original audio transformers were missing and someone had very crudely installed one audio transformer and a R-C audio coupling circuit to replace the second audio. (The replacement audio did not leave enough room to mount a second audio.) The original spring mounted *Detector* socket was missing and a substitute rigid mount socket filled the hole.



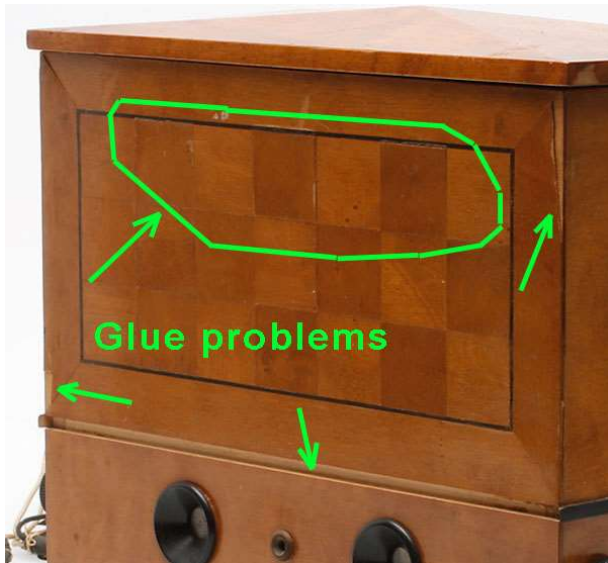
It appeared to me that these repairs had been made in recent times and may have been done primarily so that it could be sold at a premium

price because the seller could claim that “*it works*”.

Still I was not at all disappointed that Bengt had acquired the radio for me. NOW the quest was on to obtain the correct parts. Unfortunately the transformers rarely turn up and I needed TWO of them.

I begin to search the Web for references to this radio and find very few; however, I do see a five year old thread on *Antique Radio Forum (ARF)* about the M 55! A guy that I presume is in Sweden has one with a cabinet in very bad condition. I attempt to contact him but get no response. Fast forward to late September, 2014 and a private message is waiting for me to pick up on *ARF*. He tells me that he rarely visits the forum these days but did find my post. He decides that he will never be able to make a satisfactory restoration of the cabinet and that he will sell me the transformers! We eventually agree that I will buy the entire chassis just in case there are some other small parts that I need (such as the spring mount tube socket). The price was very reasonable (much less than the cost of shipment) and I was elated to discover that his chassis provided 100% of the parts necessary for a complete restoration. As a bonus, the correct audio transformers seem to be OK when checked with an Ohmeter; so some day I may power up this set for a few hours of play. **However!...** Whether a vintage radio works or not is definitely secondary to having a radio with **all its original parts**. I much more value a radio as an **accurate historical reference to the technology of the day** than something that has been modified over time.

While waiting to solve the parts problems, I reserved time for repairing the cabinet. Baltic birch plywood is commonly available and I had some in my shop. I shaved down a little piece to the required thickness and proceeded to replace the missing veneer. Of course it always takes a long time to get an acceptable color match and it is not perfect but the repairs are not so bad as to attract special attention to the casual viewer.



The little squares of loose marquetry were a challenge because 6 or 7 of the squares were loose and curled on only one or two edges. The other 14 or 15 squares were still tightly bonded. I decided to carefully coat the front of the cabinet with a thin coat of paste wax being careful to avoid getting the wax on the edges of the loose marquetry. The application of wax makes it possible to peel off the excess glue that will be expelled from

your repairs when under heavy clamping pressure.

I used a 1/4" wide strip of phosphor-bronze shim stock 0.008" thick as a probe to slip under the loose pieces and tease-out any granules of the old hide glue or wood fragments while providing a mild jet of compressed air to help clear the material.

I selected *Titebond Extend Wood Glue* for this task because of its slow set characteristic. Ordinarily I would put the glue in a syringe bottle and inject it under the veneer. Here, much of the veneer did not want to flex enough to get the needle in place, so I used the strip of shim stock to push the glue under as far as possible. The slow set characteristic of the glue gave me plenty of time to work. After gluing a couple of squares, I placed a sheet of *Mylar* film over the wood, topped with a 1/8" thick sheet of soft *Neoprene* rubber and finally a 3/4" thick rectangle of MDF shelving AND another piece of the MDF for protection of the back side of the panel. The sandwich being clamped together with heavy duty beam clamps for an overnight drying time.

After three sessions of gluing, all that was necessary is to freshen-up the French polished shellac finish after having washed-down the cabinet with mineral spirits to remove the protective wax.

There are only two things not near perfect on this radio.

1. I find it odd that the paper label on the bottom of the cabinet has been purposely defaced. The inspection date has not just been



marked out, but the paper where the date was written has been torn out! There are cryptic numbers marked in pencil. Bengt, reports a #63209 dated 23-Dec-1927 and #64300 dated 1-Feb-1928. So my #63731 must have been made January, 1928.

2. Two of the wood screws on the bottom of the cabinet were once covered with red sealing wax. One screw is associated with the four screws that must be removed to lift off the cabinet. With the cabinet off, you can replace the little rubber tires of the right angle drive tuning & volume controls. And you can also replace the snap-in grid leak resistor. The other sealed screw is associated with the two screws that must be removed to separate the chassis assembly from the cabinet base so that any parts on the chassis could be replaced. I presume that these wax seals were embossed with some sort of a company logo.

Reproduction Battery

I wanted to exhibit this radio with the manufacturer specified 108 Volt combination 'B' & 'C' battery. However, there appear to be no modern images of this battery. The closest to date I have been able to find are for this *Pertrix* 90 Volt battery #238. To this, a user would have needed to add a separate grid bias battery such as the *Hellesens*

Swedish magazine "Radiolyssnaren" of October 1929

Kristallklart,
fylligt och rent ljud erhåller Ni i Eder radiomottagare medelst

PERTRIX anodbatteri
Oöverträffad livslängd och återhämtningsförmåga tack vare den patenterade

PERTRIX-elektrolyten.

Aven glödströms, ficklampas, och belysningsbatterier av märket

PERTRIX

GENERALAGENTER:
A.-B. Nordeuropeiska
Handelskompaniet
Skeppsbron 16, Stock-
holm. Telefon 142 50.

Translation: "Crystal clear sound in your receiver when using Pertrix anode battery. Unsurpassed life length and recovery ability due to the patented Pertrix electrolyte."

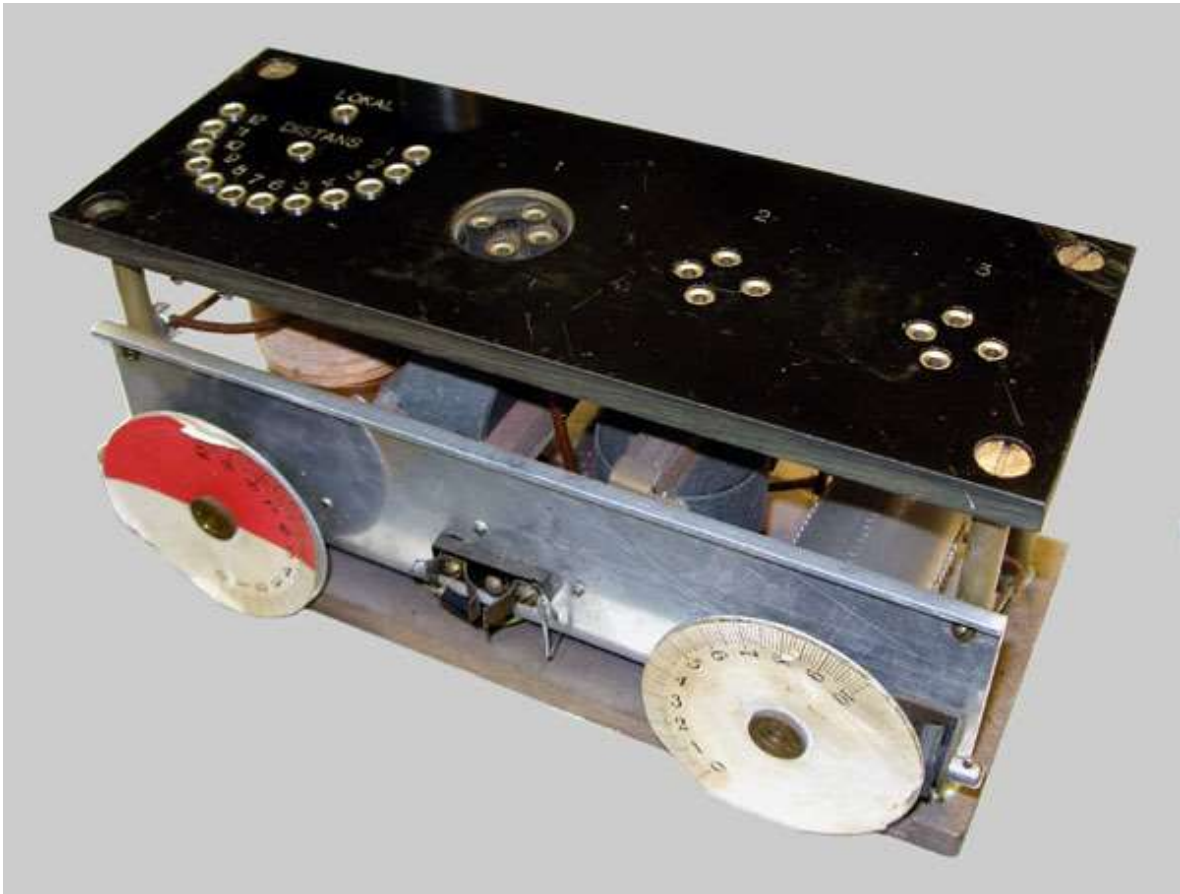
13

15 volt battery #WIRIS made in Denmark.

Bengt Svensson thinks that grid bias batteries were not made in Sweden during the 1920s. I presume this is the case probably because sales volume for this battery, that might not need to be replaced but once every three years, did not justify the tooling for domestic production.



Views of the M 55 Chassis..... 1928/29 version....

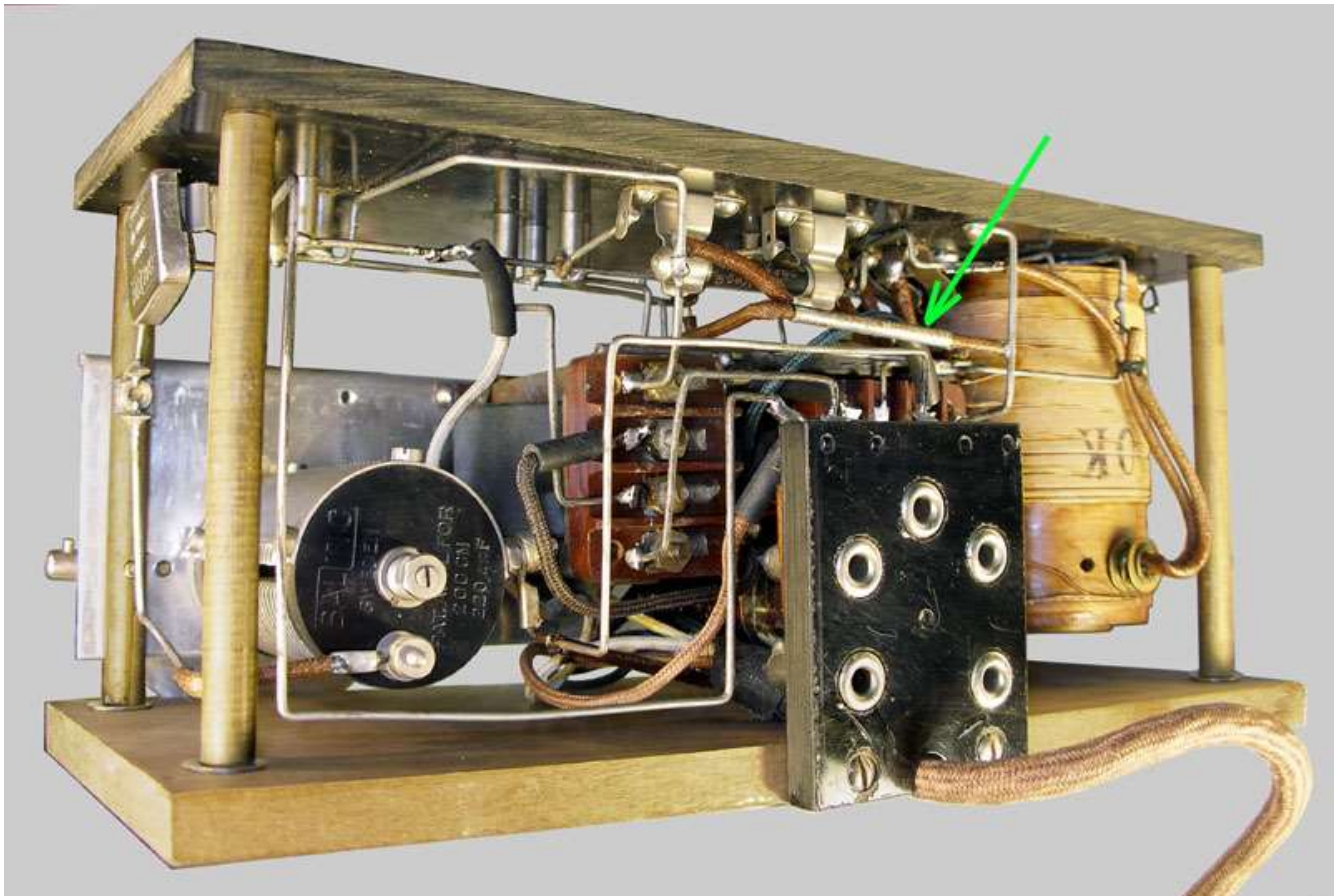


Front view of M 55 chassis. Note that the Detector socket floats on leaf springs (a very common method of reducing microphonic feedback caused by vibration of the vacuum tube elements). Little rubber tires

convey friction drive to the back sides of the tuning and volume control dials. The radio is turned ON by inserting a shorting pin between the leaf contacts mounted between the two dials. This completes the tube filament circuit.

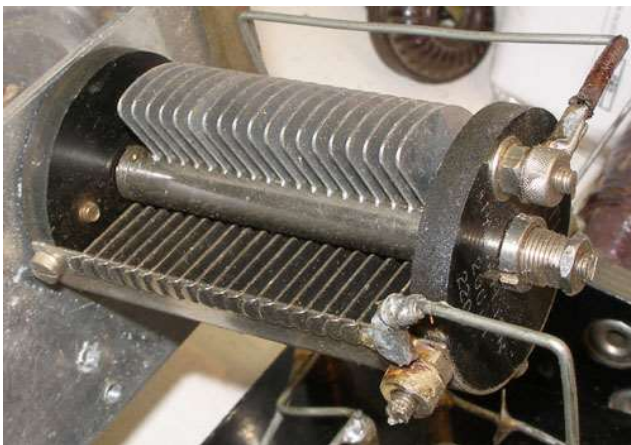


The majority of these radios would have been fitted with 2 Volt filament tubes. The filament current consumption was low enough to be supplied from dry batteries although 2 Volt lead acid storage batteries were fairly common in usage. SRA offered Radiola branded tubes most likely supplied by Philips. The type Radiola II for Detector and 1st. Audio and the type Radiola 1II for the audio output. I currently have two Philips tubes and one made by Tungstram that are supposed to be reasonable substitutes available in the late 1920s.



Green arrow points to 'gimic' capacitor wound over insulated buss wire connection to the grid of the first audio amplifier tube.

Note rubber sleeves on ends of battery cable wires to prevent fraying of the braided thread insulation.



220 pF. Tuning Capacitor



Unusual 3 section capacitor using copper windings for plates.

To date, I have located just one advertisement kindly provided by Bengt. It is from the weekly program guide, “*Radiolyssnaren*” (The Radio Listener) for 6-12 November 1927.

The advertisement was placed by one of the distributors of the *Radiola* brand known as *ASEA*. Famous for their high power DC transmission equipment companies.



Rundradio blir en njutning

endast om bästa och lämpligaste apparater och delar användas. Då vi hava landets rikhaltigaste sortering, kunna vi snabbt expediera inkommande order samt stå gärna till tjänst med sakkunniga råd i allt, som rör rundradio. Anlita därför oss eller våra representanter.

ASEA

Stockholm, Göteborg, Malmö, Norrköping, Jönköping, Sundsvall, Umeå, Luleå, Östersund.

Broadcast radio listening is a pleasure.

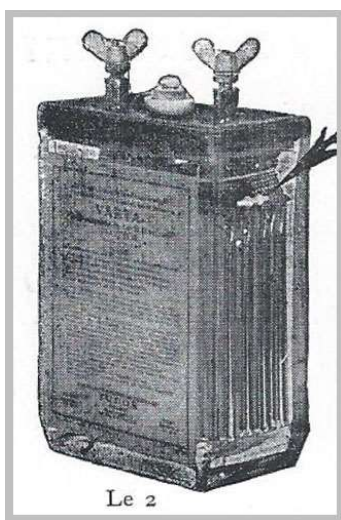
Only if the best and most appropriate parts are used.

We have the country's largest stocks. We can

quickly dispatch incoming orders and be happy to provide expert advice on everything related to broadcasting. Engage us or our representatives.

Bengt also provided a scan of the 12 page User Manual. It is shown elsewhere in this exhibit. Restoration not complete at this printing.

Examples of the accessory parts available at the time.



Note:
Unknown
what
versions of
the Amplion
Cone were
offered in
Sweden.

The following people helped make this restoration possible....

My thanks to Bengt Svensson of Stockholm for locating this radio and providing me scans of the schematic, sales brochure, related M 60 instruction manual, tubes, etc. and valuable consultation.

Thanks to Anders Widell of Lund for providing photos of vintage batteries and providing consultation.

And a special thanks to Hampus Englund of Sandiviken for providing the spare chassis containing necessary parts that made it possible to complete this restoration.

From start to finish, this project has extended over more than 18 months but has offered an interesting challenge to bring to the attention of some Americans a little better understanding of the great variety of technical differences that evolved to serve significantly different radio broadcasting systems. And for me, it is just plain fun.

Robert Lozier – KD4HSH Monroe, NC – USA
Kd4hsh@carolina.rr.com January 2015

But now there is more! See my narration on restoring the Bell Flower and Burl Mahogany cabinet versions.