Club Histoire et Collection Radio
L'association des passionnés de TSF, d'électronique ancienne, de postes à galène et de tubes radio.

The restoration of a Zenith's radio, a model Zenette

By Walter Krieg Enz CHCR n°1402

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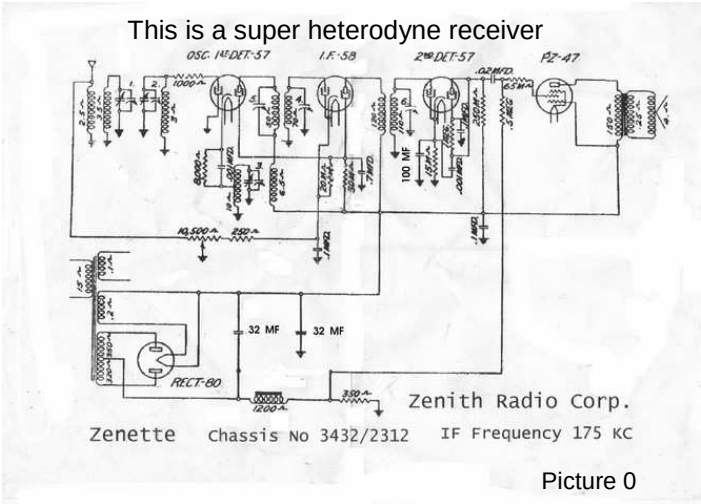
I went to a flea market arranged by a Swiss club. My intention wasnot to buy but to meet some of my colleagues. Moving from car to car I detected an interesting piece of appliance which would be just the right candidate for the competition; a scrap radio. I decided to buy it.

The restoration of a Zenith's radio, model Zenette

This is a super heterodyne receiver



Picture 0

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The restoration of a Zenith's radio, model Zenette

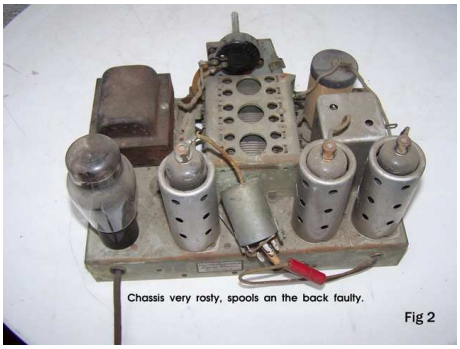
1. - Physical state of the patient

It is an American cathedral used in the 1930's in bad condition. The knobs were missing, the case badly scratched. (picture 1)

Fig 1 An american cathedral in a bad condition. The knobs missing and the case badly scrached.

The restoration of a Zenith's radio, model Zenette
2. - Internal auscultation

The electronic tubes 57 and 80 were out of order. The chassis was very rusty, the coils located on the back were faulty. I found it peculiar to put the potentiometer above the tuning capacitor (picture 2).



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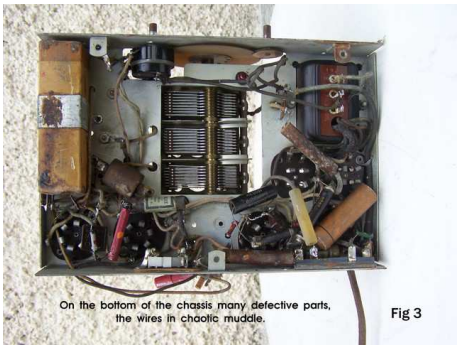
2 - Internal auscultation

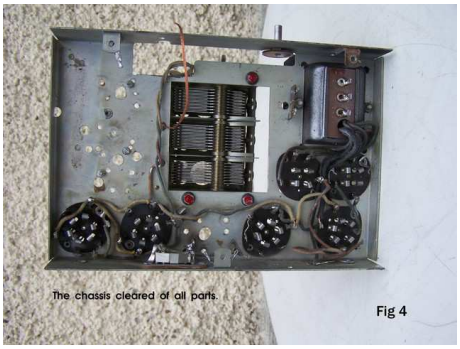
On the bottom of the chassis were many defective parts (picture 3) and the wires were in a chaotic muddle.



The restoration of a Zenith's radio, model Zenette

3. - Drastic operation

The chassis had to be cleared of all the parts (picture 4) and sprayed with aluminum paint.



The chassis cleared of all parts. Fig 4

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3. - Drastic operation

Now it looks beautiful (picture 5). The H.F. coils were partially oxidized and defective.

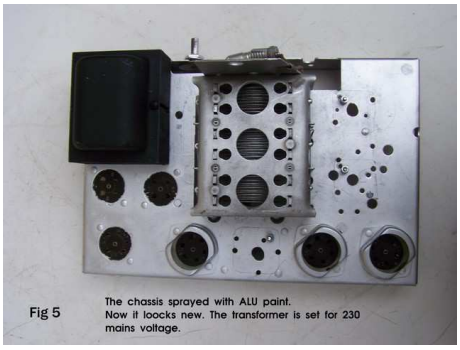

Fig 5 The chassis sprayed with ALU paint. Now it loocks new. The transformer is set for 230 mains voltage.

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3. - Drastic operation

They had to be rewound using a winding machine (picture 6). For safety, all the coils were rewound.

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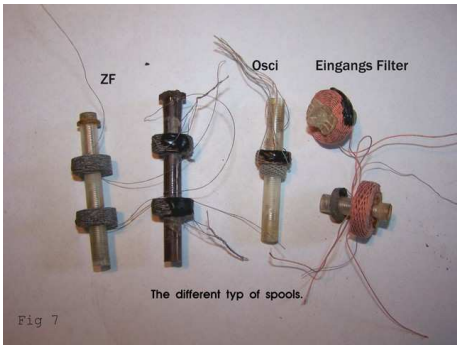
3. - Drastic operation

Picture 7 shows the different types of coils. For the sake of simplicity they were wound on the core of the coils, then reassembled with the iron cores.



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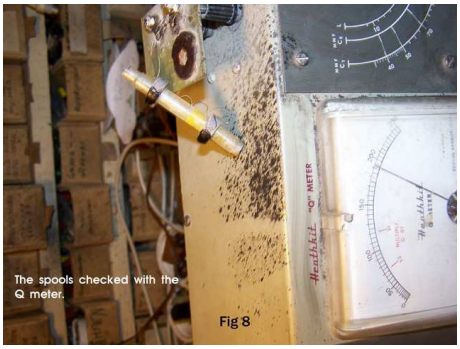
3. - Drastic operation

Before assembly, the coils had to be checked with the Q meter. The Q factor has to be a minimum of 170 (picture 8). The Q factor is the rate of alternating current resistance to direct current resistance.



The spools checked with the Q meter.

Fig 8

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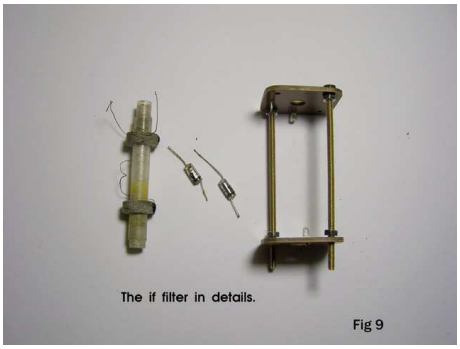
3. - Drastic operation

Picture 9 shows the IF filters in details.



The if filter in details.

Fig 9

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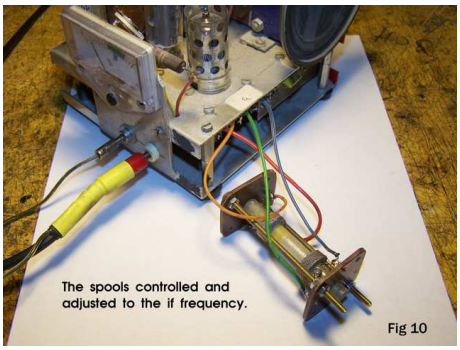
3. - Drastic operation

Before assembling the parts on the chassis, the coils had to be verified and adjusted to its respective frequency (picture 10), this way the coils after assembly is assured.



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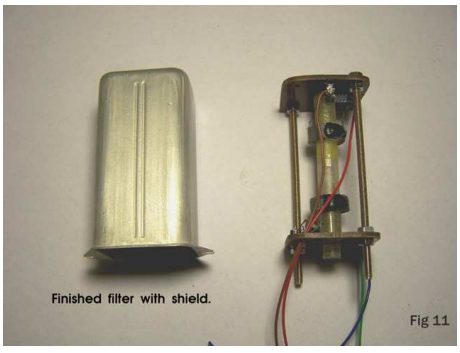
3. - Drastic operation

Picture 11 shows a finished filter with shield. The chassis was rewired, all the condensers were replaced as well as the faulty resistors.

Tolerances were off up to 70 %. Only parts with the American color code were used. European parts don't belong in this Zenith.



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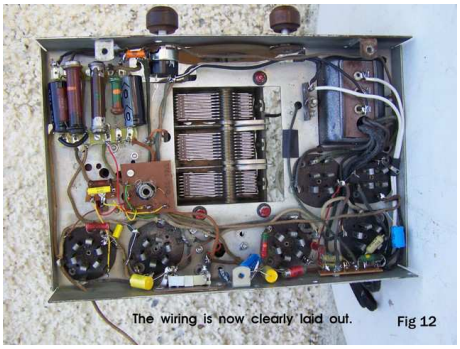
3. - Drastic operation

The wiring is now clearly laid out (picture 12). All the contacts to the vacuum tubes are now accessible. It's the same set up but it looks different. This Zenith is a super heterodyne receiver (picture 0) with 5 tubes; 57- mixer tube, 58- IF booster, 57- demodulator, 47- amplifier and an 80 dual-rectifier. To improve the selection a band filter on the antenna is used. With the variable cathode voltage on the IF amplifier the sound volume can be adjusted. The intermediate frequency (IF) is 175 kc.



The wiring is now clearly laid out. Fig 12

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3. - Drastic operation

The transformer is set for 230Vac mains voltage.Picture 13 shows the chassis from the top. The red coils are the entrance filter and the tuning capacitor was fitted with new trimmers.

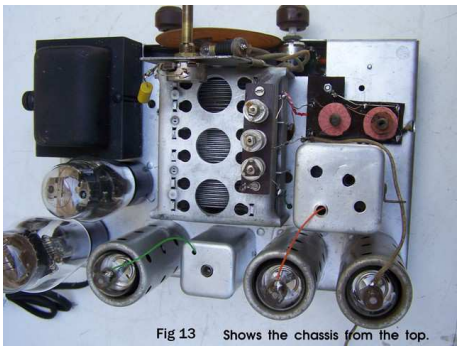

Fig 13 Shows the chassis from the top.

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4. - A judicious combination of adjustments

- These trimmers are important to align the frequency to 1200 kc. The IF filter placed on the back of the tuning capacitor is also a reasonable compromise. Trough fitting H.F. cores, the entrance filter could be accurately balanced. The sensitivity with balancing IF is increased.
- Measuring the voltage on the tubes all gave precise values. Picture 14 shows the restored Zenith from the back.

Showd the restored Zenith from the back.

Fig 14

The restoration of a Zenith's radio, model Zenette

5. - Beautiful sound with a stark and musical voice!

- The result of the restoration is an efficient and beautiful radio. It is a pleasure to listen to the broadcasts, with a sensitivity of 15 µV. (picture 15)
- All the time spent for the restoration was more than worthwhile.

Fig 15 The result of the restoration is a efficient and beautiful radio.