

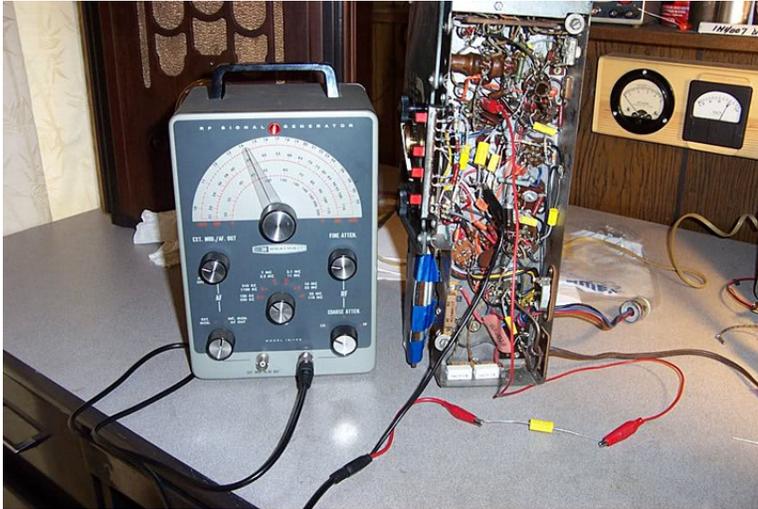
# Zenith Transoceanic Alignment

Text and Photos by John (Badrestorer), member, Antique Radio Forum

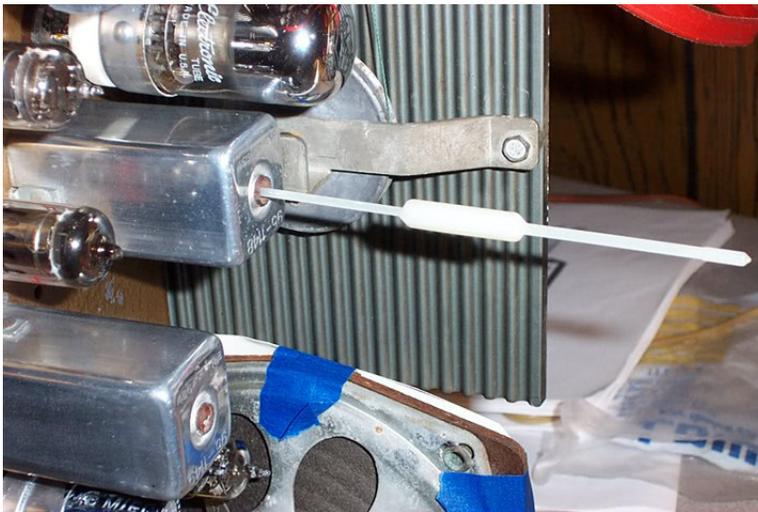
## BC (AM) Band Alignment

Per the alignment instructions, I connected a .1uf capacitor (dummy load) to the positive lead of the signal generator. A gator wire was then connected from the other side of the capacitor to the control grid of the 1L6 (1LC6) tube, pin# 6. The signal generator black wire was connected to B minus. The signal generator was adjusted for 455kc and the radio dial set to 600kc.

This radio has a floating ground, so B minus is the negative. Non-floating ground radios usually have the chassis as ground:



The sig. gen. was now feeding 455kc to the circuit, so it was time to peak out L5, L6, L7 and L8. They're the four slugs in the IF cans, two in each can. A 6-sided, non-metallic tool is needed to make the adjustments:



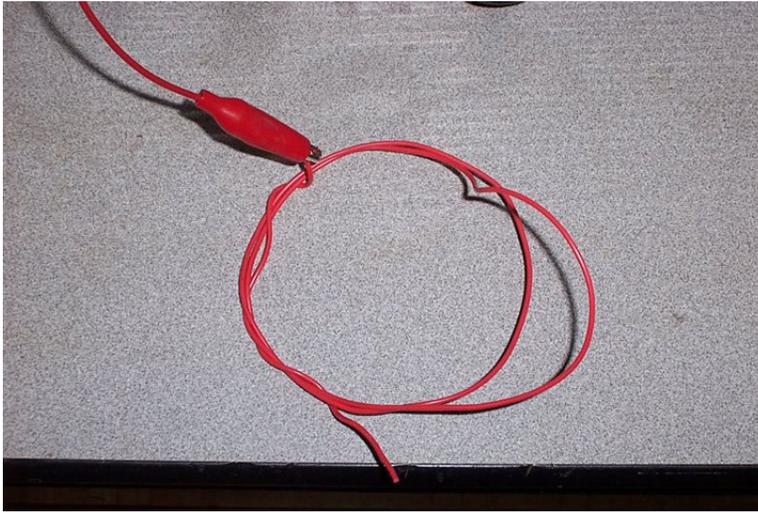
The instructions said that the best alignment is achieved by placing the chassis on top of a metal plate, the same distance away as the top of battery pack is from the bottom of the chassis when everything is back in the cabinet. It's supposed to simulate the approximate amount of metal in the RF and oscillator coil fields as when the chassis is sitting over the battery pack. Welllllllll, I decided to do that some other time. Right now I'd just turn the IF slugs and see what happened. I was also supposed to hook up an AC output meter, I assume to the audio output transformer, but the instructions didn't say. And it had to be a meter with a copper oxide rectifier. I'm fresh out of those, so I decided to do it by ear. Hasn't failed me yet.

Each IF can contains two tuning slugs, one sitting on top of the other. Both are hollow, enabling adjustments to be made from the top of the can. Here the adjustment tool is in position to adjust the top slug (the secondary coil)

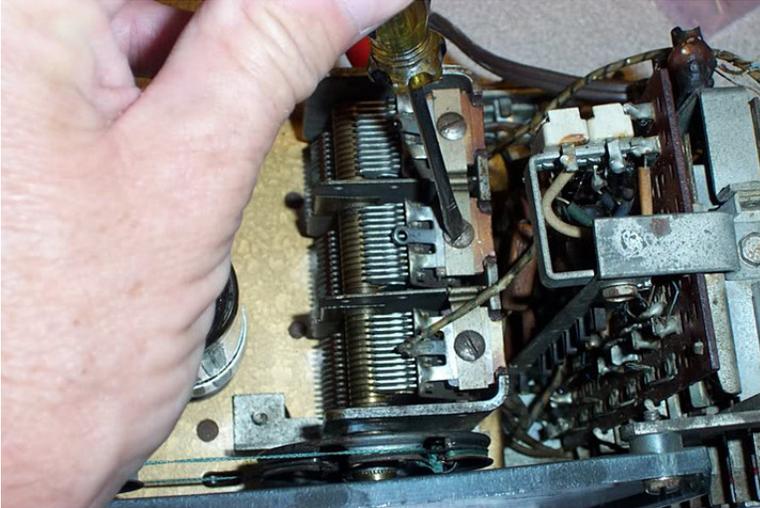
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Considering how well the radio had been playing on the broadcast band, I was surprised at how much adjustment was needed. Luckily, they peaked perfectly without any damage to the delicate slugs. Those puppies can be very brittle from age, so care and patience is a must when turning them. Easy, easy does it...or you could learn a very hard lesson.

Next came the antenna, RF and local oscillator adjustments. They're located on top of the tuner. But first a small coil of wire had to be connected to the signal generator positive lead and hung over the Wavemagnet antenna (the loop antenna). I used a random piece of wire from my workbench drawer:



With the signal generator and radio tuned to 1600kc, the oscillator was adjusted for maximum tone (the bottom adjustment screw in the pic). Then the signal generator and radio were retuned to 1400kc and the center screw (RF) and upper screw (Antenna) were adjusted for maximum tone. Each of these adjustments can affect the other, so it's always a good idea to go back and forth two or three times with this until things are peaked out:



The final broadcast band adjustment is C32, located at the rear of the chassis. It's done with the signal generator and radio both tuned to 600kc.

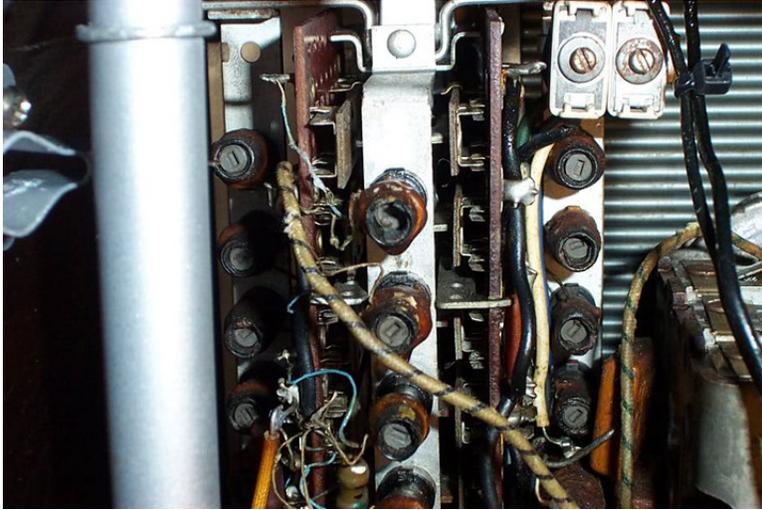


## Shortwave Bands Alignment

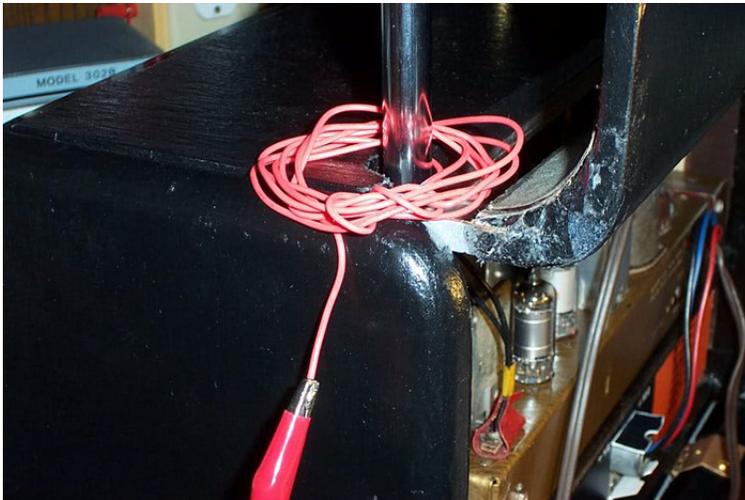
Shortwave alignment.

This is it, folks...the final posting on this Transoceanic H-500. The broadcast band has already been aligned, leaving the six shortwave bands to be done. Since they're all the same, I'll only go through one. But I do have a caveat...my frequency counter went bonkers and I don't have an analog multimeter to monitor the output. But the sig. gen. is fortunately right on target, having tested it with the counter before it gave up the ghost, also with a digitally tuned radio. So I fed in the different signals and tweaked the shortwave by ear. Seems to have worked well. The radio doesn't haul in a million shortwave stations, but those that do come in sound pretty good. Later on I'll mess with it a little more. So let's get on with it.

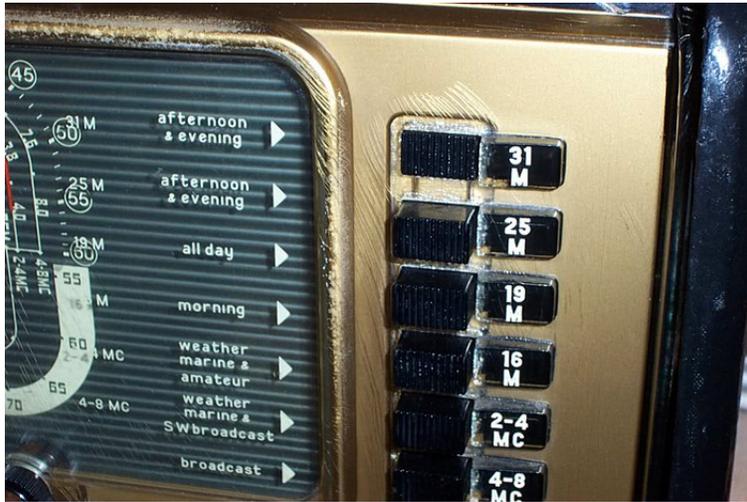
Looking at the coil tower from the rear, you'll see three vertical rows of coils. Those in the center are the antenna coils. On the right are the oscillator coils and on the left the detector coils. The alignment procedure for each band requires that you adjust three of those coils, but it does not stipulate in which order, so after feeding in the signal I just kept going back and forth between the three coils until things were finally righteous. It sometimes took quite a while:



The alignment procedure says to first hook up a 3-foot length of wire to the positive lead of the signal generator, then place the wire about a foot from the extended Waverod. But I discovered that it didn't make any difference where the wire was located, a foot away or right up next to the antenna, so I just wrapped the wire around the rod. Curt also said it would work just as well. He was right. Also, the procedure said to not hook up the negative lead, so it was left laying on the bench:



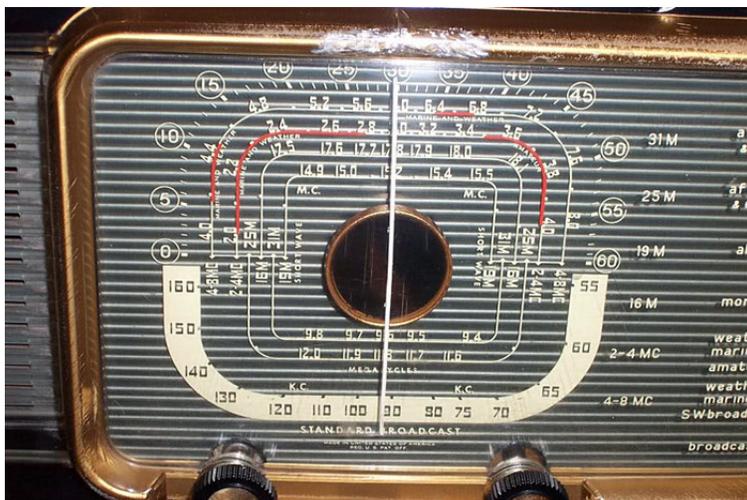
I started the alignment with the 31 meter band, so the top band switch was pressed in:



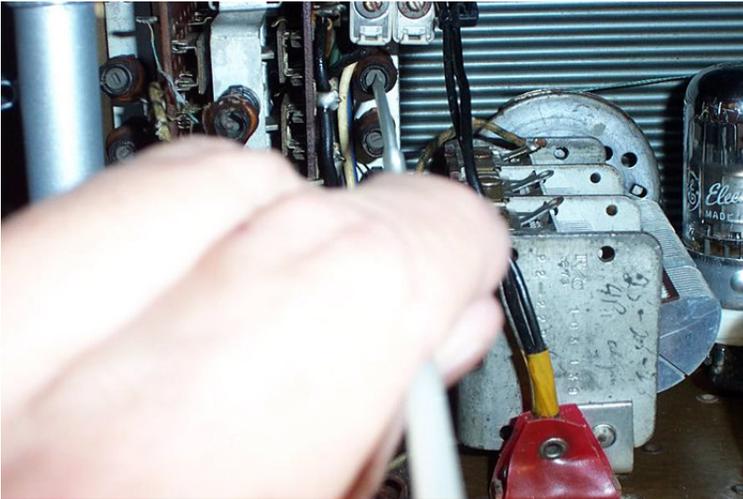
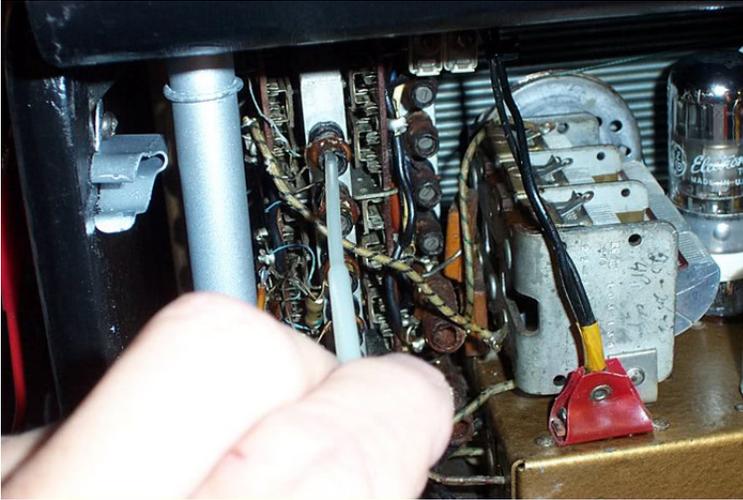
Per the alignment instructions, the signal generator was adjusted to 9.6Mc:



And the radio was tuned to 9.6Mc. Immediately, the signal was heard, but I very finely tweaked both the sig. gen and the tuner until the tone maxed out:



The location of the band switch buttons on the front of the radio directly corresponds to the location of the coils on the tower. In other words...the 31 Meter band switch button is at the top and so are the three coils for that band. I went back and forth between the three until I couldn't squeeze out another drop of signal volume:



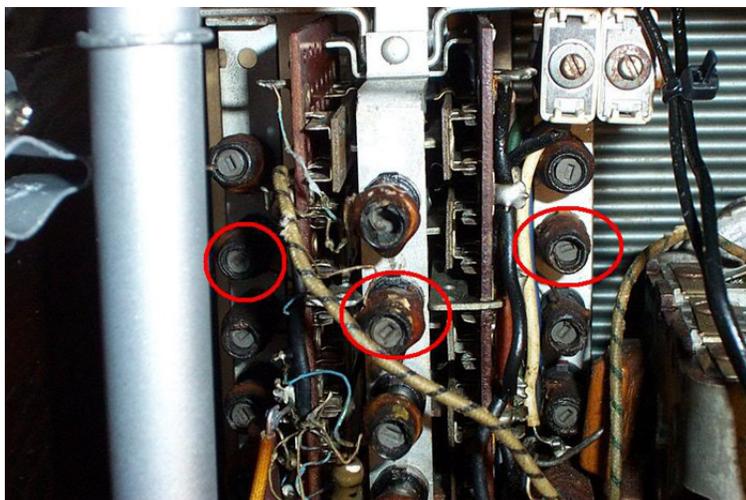
With the 31 meter band tweaked up, it was time to do the 25 meter band. The same procedure was followed. The band switch button was pressed:



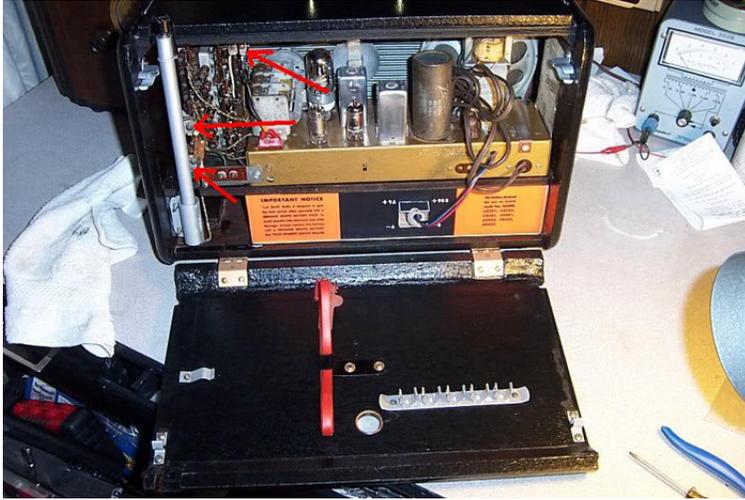
The signal generator was adjusted to 11.8Mc:



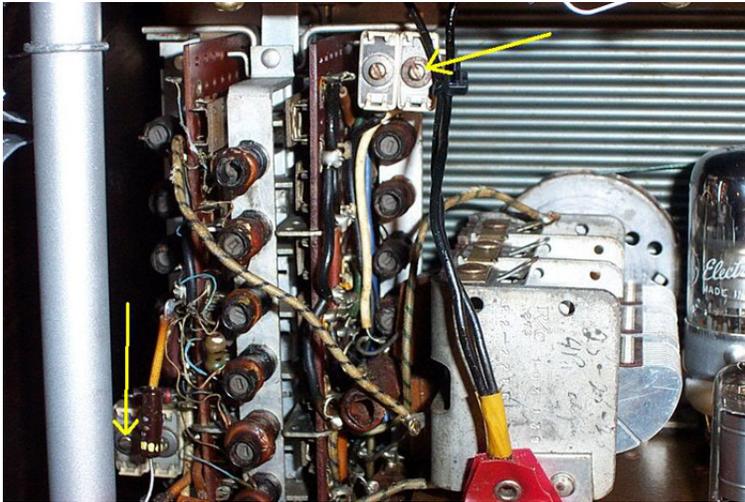
The radio was tuned to 11.8Mc And the second row of coils were tweaked and peaked for maximum signal tone:



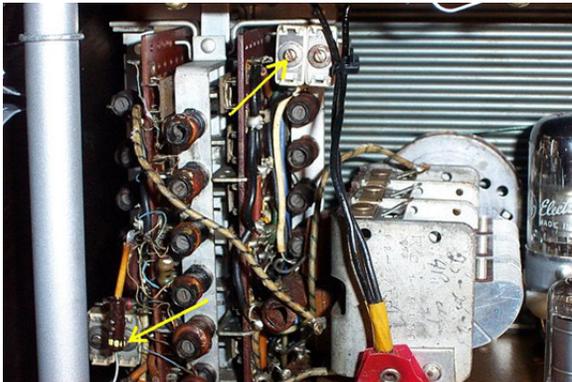
The same alignment procedure was done for the 19 and 16 meter bands. However, alignment of the 2-4 Mc band does not require coil-tweaking. Instead, trimmer capacitors C-33B, C36B & C37B (osc., det. & ant) are adjusted, but the mechanics remained the same. Just follow the alignment instructions. The trimmers are located here. I just realized this isn't such a hot pic. Tomorrow I'll replace it with a better one:



Here's a closeup of two of the trimmers (33B & 37B):



The 4-8Mc band also required the adjustment of trimmer capacitors, C33A, C36A & C37A (osc., det, & ant). Those trimmers sit right next to those for the 2-4MC band:



One last thing...don't let the adjustment of those small coils spook you. If one of the slugs falls out just screw it back in. It's not a big deal. They look like this:

