



August 2010



A NOTE FROM DAVE

Celeste and I had a wonderful trip to the Northwest US, but are glad to be back in the HOT sunny Southeast. I want to thank Dee for filling in for me last month. If you missed my program July 26 when I showed pictures from the trip, I will be glad to send a few to anyone in the club. Our weather in Oregon was certainly different from what we experienced on our arrival back in Alabama. Standing in 3 ft. of snow on July 1 is quite different from my ordinary July firsts. I found some very interesting museums on the trip and was able to see radios and airplanes, which was my goal.

The Scott radio finally is in its new home in the Alabama Power Company atrium and looks great.

We are still anticipating having to move from Huffman sometime within the next year; more on that in coming newsletters. We will need lots of help during the move. My thanks to all who helped with the Scott move.

We still need articles for the newsletter--thanks to Joe Minor for contributing this month.

I had to include one photo that I took on the trip at Crater Lake. Come join us any time you can on Saturdays and continue to support Robert's classes.



Dave



DEE'S RADIO SHOWS

Boy, it sure is hot out there. I hope everyone's air conditioners are working properly. Although my central unit is pushing 35 years old, it still pumps out 48-degree air at the registers. Unlike so many homeowners out there, I keep my unit clean, and oil the fan motor occasionally.

As I lay in my bed at night waiting on sleep to overtake my feeble brain, I listen to my old radio shows on my Ipod--boy, what an oxymoron. The Great Gildersleeve is going through the war years now. The ads for Kraft products make sure you know that it only takes 4 Red Ration coupons to buy a pound of Kraft Margarine. Last night I listened to the Easter show, and at the end of the show, J. L. Kraft (owner of Kraft Foods, Inc.) gave a short sermon about the meaning of Easter and the Resurrection of Jesus Christ. And it wasn't unusual to hear the network announcer tell you to regularly attend the church or synagogue of your choice. Can you imagine that happening today?

Most all of the shows I enjoy took place between the mid to late 30's and ran through the 1950's, which obviously encompasses the WWII and the Korean conflict. If anyone is interested, I can make up a small collection of shows that give us examples of life during those years of rationing, hard work, and sacrifice. Just let me know. If I get enough response, I'll make up a CD with shows in MP3 format.

A little reminder that "internet archive" is still one of the best sites for old time radio shows and old TV shows. Here's a sample of a Roy Rogers radio show from January 23, 1945. Just click on the 4th show down, or if you want to listen to a different show, just click on it.

http://www.archive.org/details/The_Roy_Rogers_Show

While I've got your attention, let me tell you about the Scott Philharmonic Radio. With the help of Marvin, Maurice, Johnny O', and Dave Cisco, we got the radio installed in its new cabinet in the Alabama Power Co. building downtown. It's in the atrium on the back side of the escalators. That site was chosen for its good visibility to the people going in and out of the offices upstairs. The new display that Alabama Power built for us is perfect in that it takes away absolutely nothing from the subject matter within. And I'm not exaggerating when I say that the Scott is a "Grand Old Lady." Last but not least, let me thank Bill Tharpe, Dan Bynum and all the rest of the Alabama Power folks that help put this thing together. They say a picture is worth a thousand words, so here is a shot taken after the installation. Other pictures are going to be available on the Web site.

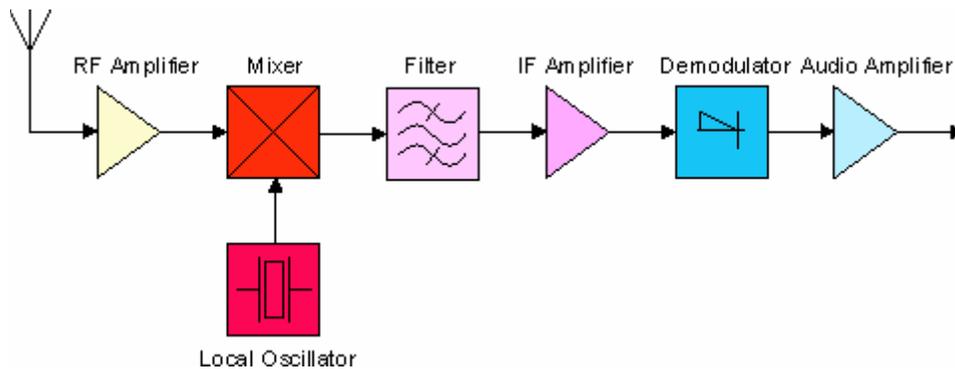


Marvin Shepherd is standing next to the Scott, which is completely incased in a Plexiglas cabinet.

Dee Haynes

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The Converter: Mixer and Local Oscillator by Joe Minor K4JOE



Kilocycles per second (Kc's) is now known as Kilohertz (kHz). Kc's will be used in this article. The Mixer is sometimes called the First Detector. Mixer will be used here.

The converter consists of 2 parts, the Mixer and the Local Oscillator. They are closely inter-related and we will discuss them as one unit, **The Converter**.

The functions of the Converter are:

1. Tunes and amplifies the modulated received signal
2. Generates an un-modulated RF signal of its own which is different than the received signal (The Local Oscillator frequency)
3. It mixes its signal with the received signal
4. It maintains a constant frequency difference (the 455 kc IF Frequency)

The received frequency could be anywhere in the Broadcast band from 550 kc's to about 1600 kc's. Let's review the mixing of the signals. Remember we get 4 different signals.

1. The Received Radio Station Frequency
2. The Local Oscillator Frequency
3. The Local Oscillator Frequency + Radio Frequency
4. The Local Oscillator Frequency – Radio Frequency (455 IF)

Radio Station Frequency

(Received signal)	Local Oscillator	Local Osc + Rec	Local Osc – Rec (The IF Frequency)
550	1005	1555	455
1000	1455	2455	455
1600	2055	3655	455

The IF must remain at 455 kc's and this is one of the main functions of the converter. The IF transformers lets the 455 kc's signal pass and rejects all others.

Now we can see that the Local Oscillator must change from 1005 kc's to 2055 kc's and "Track" with the incoming signal. The main tuning knob on the radio is ganged and changes both the incoming signal from the antenna and the Local Oscillator signal, with the difference always being 455 kc's.

Turn the radio on and place the dial to 550 kc's. Now, loose couple (put lead close to but not touching) a frequency meter to the oscillator coil and ground the other end of the frequency meter. Adjust the oscillator to 1005 kc's (550 + 455). Move the radio dial to 1000 kc's and adjust the oscillator to 1455 kc's (1000 + 455) on the frequency meter. Then move to 1600 kc's with radio dial and adjust the oscillator to 2055 kc's (1600 + 455) on the frequency meter. Note that this is always 455 kc's above the incoming signal frequency.

The trimmer capacitor is that small capacitor in parallel with the main air variable tuning dial capacitor. It has more effect at low capacitance (High Frequency on dial). This capacitor is also known as the "High Frequency Oscillator Aligner".

The capacitor which is in series with the main tuning air variable capacitor has a greater effect at the Low Frequency on the dial. This is usually done with the dial of the radio set to 600 kc's and that capacitor is often called the "600 Padder". Now the radio dial, Local Oscillator, and the main tuning capacitor should all track together.

If your radio does not have a 600 padder capacitor, you may have a "Cut Plate" Oscillator tuning capacitor. The rotor plates are smaller and have a different shape. The shape is designed so that tracking is automatic and the oscillator circuit always is 455 kc's higher than the received frequency.

Quick check of the Oscillator section: Measure the grid voltage with a high impedance voltmeter. The grid should read a negative voltage.

Quick check of the Mixer section: With a signal generator, inject a 455 kc (or the IF frequency) signal that has a modulated (usually 400 cycles) to the mixer grid. If all other sections are working correctly, the 400 cycle tone will be heard at the speaker.

Come on down to Robert's class the first Saturday of each month and learn more about radios. See you there....

73's Joe Minor - K4JOE

MEETING TIMES

We meet nearly every Saturday of the month at 09:00 at the Alabama Power Building on Parkway East (aka Centerpoint Parkway) in Huffman. The organization's space is accessed from the rear of the building, so park around the back (by means of Huffman Road, which runs parallel to the Parkway). Entry is via the door on the right.

Come to the Monday Night Meetings, TOO, on the 4th Monday of the month at 7 PM!

FREE ELECTRONICS CLASSES

The first Saturday of the month, there are electronics classes free to members. Topics include test equipment, Resistors and Capacitance testing, Inductors and coil winding, to name only a few subjects!

We hope to see you there!



DUES ARE NOW DUE

Membership dues are \$25 a year, payable [beginning in January](#). If you have questions about your dues, you can contact Tom at 205-967-7000.

[Dues can be mailed to AHRS @ P.O. Box 131418, Birmingham AL 35213.](#)

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