My receiver doesn’t work right!

What should I do?

First, relax. You will be able to get it to work. The design is good, people around the world have built this receiver, and you will be able to get it to work. But homebrew radio is not plug-and-play radio. Sometimes a new receiver needs some tweaking, peaking and coaxing.

Realize that the 40 meter band has its ups and downs. The downs usually come at mid-day. The sun’s position high in the sky causes a build up of the F layer of the ionosphere. This tends to absorb radio waves. So signals are often weak at mid-day. Signals will be much stronger in the morning, and in the evening.

Can you hear the “band noise” when you connect your antenna? This sounds like hiss or static. Some of this is the result of thunderstorms in Brazil. Some of it is from events far away in the cosmos. Some of it comes from the weed whacker down the block! But if you can hear this noise, that is a very good sign that your receiver is working. The signals you are looking for will be stronger than this band noise.

Where are you tuning? Your receiver tunes from about 6.8 MHz (with the screw all the way our) to about 7.8 MHz (screw all the way in). But we are only really interested in the ham frequency band between 7.0 MHz and 7.3 MHz. Try to tune your receiver near the middle of the tuning range (with the screw about half-way in). You should hear morse code from about 7.0 to 7.06 MHz. Then you should hear strong digital signals at 7.074 MHz. Tuning further up (screw going in) you should start to hear hams speaking to each other using Single Sideband. At first they will sound like Donald Duck.

Don’t worry about the Donald Duck speech! Just carefully tune through the signal until you hit the spot where the speech sounds normal. You may have to tune up and down a bit until you find the right spot. Now you can listen.

If you tune further up you will hear Shortwave Broadcast band AM signals. You will be able to tune them in. Sort of. But they will sound distorted. This is unavoidable with this kind of receiver. But you will be able to hear the hams on Single Sideband with no distortion.

Sometimes you will only hear one side of the conversation. That is normal. The other station may be either too far away from you, or too close to you. You may be outside his or her skip zone.

One very obvious thing to check: How is your battery? Is it drained, or is it still at about 9 volts? You may need to change it.

How is your antenna? It doesn’t have to be fancy or elaborate. 33 feet of wire will do. But it does need to be up in the air a bit. And you need to have the 33 foot counterpoise wire connected to the ground (on the PC board). With many pieces of consumer electronics antennas are kind of optional – the devices will often work without them. Not so with ham gear. Antennas are important. If you are not receiving signals, it may be because of your antenna.