

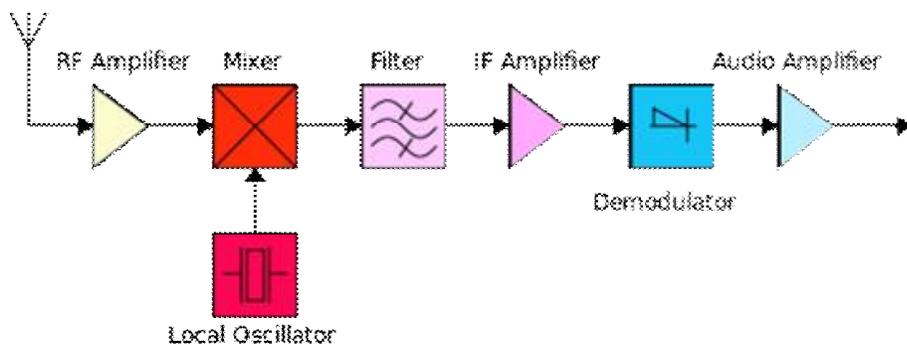
Newcomers and Elmers Net Shortwave Radio is the Best! 11-23-14 Robert AK3Q

Shortwave Radio

- shortwave radio is how a lot of hams got into Amateur Radio
- hearing strange Donald duck sounding voices, or morse code, or having a receiver which could pick up SSB
- shortwave radio falls in the MW and HF portions of the radio spectrum, but mostly in the HF
- A typical shortwave radio is one which covers from about 2.3 to 26 MHz (2300-26000 kHz), and usually includes the AM broadcast band, along with LF starting at .300 MHz.

- Most stations transmitting in the HF portion of the band are AM or *amplitude modulation*, with a few broadcast stations using SSB

- Shortwave radios are usually described as single, double, or triple conversion radios, and you may also see the terms heterodyne or superheterodyne bandied about. I'll start with the second set of terms first. A heterodyne circuit is one in which two or more frequencies are mixed, or combined, to



- or combined, to produce a third frequency. This third frequency is allowed to pass through the radio out to the speaker, while the other elements are not.

A superheterodyne (or *superhet*) receiver shifts all incoming signals down to an intermediate frequency (or *IF*), which is then filtered and modified to produce the audio.

A *single-conversion* receiver shifts the signal (heterodyne) to one intermediate frequency, whereas a *double-conversion* receiver creates a second intermediate frequency, first high and then low, allowing optimal filtering to be accomplished at each end of the intermediate frequency.

In older radios before computer chip/software processing of signals, a dual conversion radio had less problems with *images* (duplicate signals received on a different frequency), and audio was generally cleaner.

- With modern receivers using digital signal processing chips, even single-conversion radios can produce good sound, but dual conversion radios will have the edge in quality.

A Range of Perspectives

One of the biggest benefits of shortwave radio in my experience is the broad range of perspectives offered from wide-ranging sources. For example, with regard to the recent troubles in the Ukraine, American 24-hr news stations repeated similar stories almost endlessly, but their perspective was mostly the same.

Listening to Radio Australia and China Radio International, I got different takes on these important world events. One was not better than the other, but the differences in perspective was educational. I could only wish the Voice of Russia had not already ceased broadcasting at that point, because it would have been informative to hear their perspective as well.

Journalistic integrity (and no, that is not necessarily an oxymoron!) is not limited to any one group or country. I have found interesting and reliable information from many sources in addition to those stations which taint their broadcasts with political propaganda. A discerning listener will recognize the difference, and he or she will form their own opinions about on whom they can rely.

-- Not only can you receive news, music, and cultural information from many different countries, you can also hear clandestine broadcasts of a political nature designed to give a voice to opposing parties.

-- While some of these broadcasts are allowed by the ruling political party, oftentimes these "rebel" broadcasts are constantly on the move to avoid detection. Radio, and shortwave radio in particular, remains as the only means of widespread communication not able to be squelched by government control.

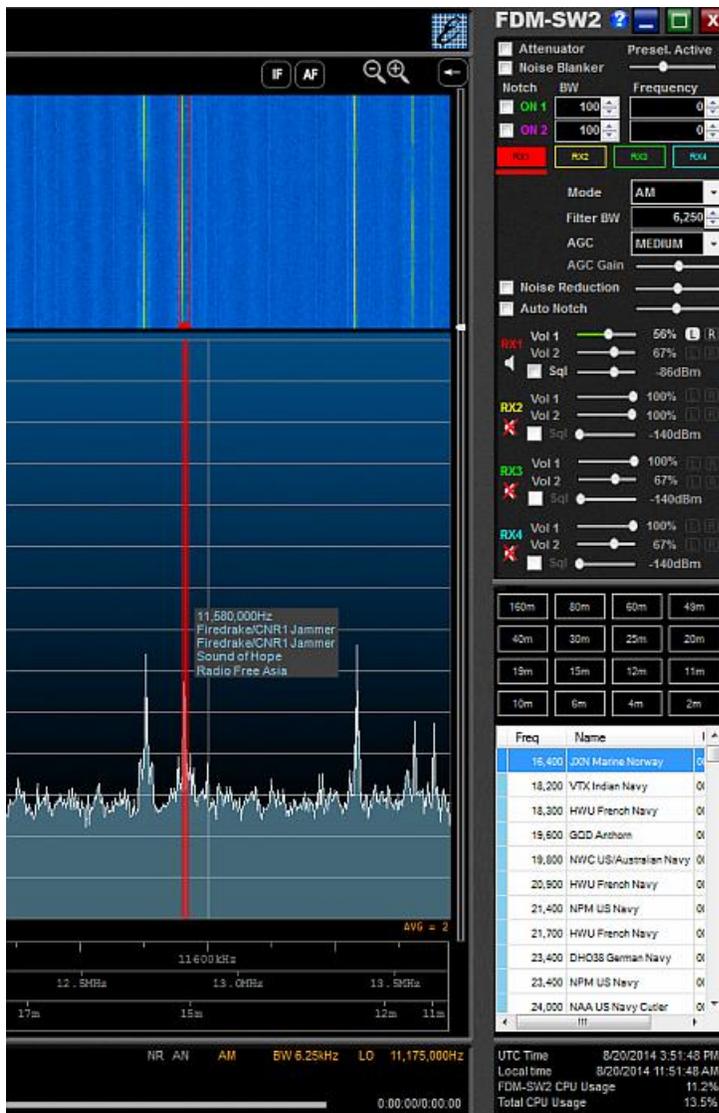
Good Times Ahead

Winter is coming up in the Northern Hemisphere which, with its longer nights, can make for some excellent shortwave reception. Long wires, beverage antennas, loops and more can all make good shortwave listening antennas. On the other hand, highly directional antennas can allow for weaker signals to make it through, and this can provide some interesting listening as well. For me, SW is a lot like amateur radio—DX catches are particularly enjoyable, and if I have to dig through the mud to get them, well that just makes them more special!

The next time the amateur bands are quiet, or the mood hits just to listen rather than talk, tune to the shortwave bands and enjoy. Then make sure you send off a note over email or mail a QSL card/reception report to the stations you heard. This lets the folks at the station know we are out here listening and enjoying the magic of shortwave radio!

SDR

I have recently been using an SDR rig to listen to shortwave radio in addition to my trusty analog radios, and I have to say I am having a lot of fun. One of the advantages to the SDR software is the ability to integrate a freely available current shortwave database which displays station information when hovering over a known frequency.



The image here is a partial screen capture with the mouse hovering over the red frequency marker. At 11.580 MHz there is an active Firedrake jammer, as well as Sound of Hope and Radio Free Asia (the latter being the most likely target of the jammer).

Most SDR software also allows for some form of database or favorite station storage, and this is a real benefit. One could easily design a listening routine for various times of the day, while still allowing for the fun of exploration and happenstance.

What I have discovered is that I am finding smaller stations which I might have missed before, as well as being able to identify a station faster, especially if it happens to be on a common SW frequency.

With the demise or reduction of the big traditional SW stations, there is a positive side—there is more attention being given to less well-known stations. Stations like All India Radio, KBS World Radio, Broadcasting Services of the Kingdom of Saudi Arabia (BSKSA), Radio Cairo, Radio France International, and many others are more prominent now, and they offer a lot

of cultural diversity. A great resource to find out what is currently broadcasting any time of day can be found at www.short-wave.info

Antennas

While there are far more antenna options than can be covered here, don't neglect the telescopic whip of your portable radio, or the usefulness of a random wire attached to either your portable or your tabletop radio. A random wire is just that—a length of wire (speaker wire works great) strung across the room, or better yet, running out a window into the back yard, attached with an insulator to a tree or other convenient support. Attach the radio end to a screw terminal if available, or if using a portable, clipped or wrapped around the telescopic whip. While some cheaper portable radios will overload with a random wire, most will not, and can benefit greatly by a 25' or longer wire. (If your radio comes with a retractable wire use that for a start—often they will pull in more signals than just the telescopic whip.)

Wrap-up

Shortwave is good practice for developing listening skills for Amateur radio

- propagation conditions, listening skills, and learning to hear folks speak in other languages all improves your amateur radio experience
- there are always digital modes to listen in on, as well as beacons to hear, utility stations, and multiple bands with varying seasonal propagation characteristics
- this means you do not have to wait until you have HF privileges to get some real benefit out of the shortwave radio bands
- and if your radio has SSB options, then you can listen in on hams around the world.
- BTW, this might just be a good reason to get an amateur radio rig for HF even if you don't have your General license yet – they also make great shortwave radio rigs!!