

Newcomers and Elmers Net: How to Think Like a Radio 3-30-14

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- What are some of the difficulties you have experienced using radios?
- Are there things that seem counter-intuitive when using your radio?
- Have you read your manual, and if so, was it useful, and if not, why not?

Learning to think like a radio is a way of saying we have to learn the logic of how a radio is organized.

-- some of these things are things to consider before purchasing, but if you already have a radio, you will want to learn how to use it the most efficiently

1. What will the radio be used for?

- if it is a handheld, how can you use it in the field/on the go?
- if it is a mobile radio, how easy is it to use while driving? Many radios come with full-featured mics that let you control the radio from the handset

2. What are the goals of the manufacturer? They will highlight what they think are the features which set it apart in the ads for the radio or in the highlights of the instruction manual

3. What are the memory schemes? How are the memory channels organized?

Every programmable radio will use some form of a menu or function button, or both

- for some radios menu items are designed for things you set once in a while, or for basic configuration of the radio
- the function button usually deals with day-to-day operation— typically increasing the keyboard shortcuts
- for example, the ability to assign a name to a channel is usually controlled in a menu function, whereas adjusting the ctcss codes or the repeater offset can often be accomplished using the function button and keyboard

Another example is the difference between a radio which is designed to operate mostly on channels, versus a radio that is designed to be used by tuning frequencies like an HF rig

- while the HF rig will have memory channels, they are usually more limited and organized rather chronologically

On the flip side of the coin, some of the new software defined radios are making much better use of memories and functionality in that they expect you to be using a computer interface with features you are already used to using

While almost all radios offer memory or frequency scanning capabilities, ham radios are not going to scan frequencies or memory channels as fast as a scanner. Understanding the capabilities and limitations of a radio will keep expectations in line and frustration levels lower!

One of the best things to do when setting out to program a radio is to learn how the radio "thinks". Try to learn the logic behind how memory channels are organized or implemented. Taking the time to read the manufacturer's manual will be time well-spent. Some manufacturers see memory organization as a straight-forward 1-100 scheme, with no divisions or no ability to take chunks of memory channels for scanning while leaving the rest.

Other radios offer a lot of memory options such as bank selection, bank linking (where 10 banks might be linked where banks 1,3,and 5 are scanned together), banding, mode, or by any number of other methods of grouping/linking frequencies. Understanding how a radio thinks can save a lot of aggravation down the road or multiple programming steps while trying to squeeze things together.

Similarly, learning the different scanning options on a radio can open up some interesting possibilities, especially if there are scanning schemes already built into the radio. For example, scanning in groups or bands can allow some organization of repeaters, simplex frequencies, or even channels outside of the amateur bands if the radio covers additional frequencies

One of the biggest benefits to radio programming software, aside from not having to enter everything by hand and then not having a backup, is that the software will already know how to best organize the input options and organizational issues for a given radio. For example, the popular Wouxon and Baofeng radios handle repeater shifts and CTCSS codes quite differently than a Yaesu.

Learning to think like your radio also means learning how to use the features to get what you want out of it

-- with HF radios there are filters, DSP settings, tuning options etc.' getting comfortable with your radio means spending time learning it so you know what you need from it

Learning to think like your radio also means learning how to get the most power from it, the best signal, and the smoothest operation

- for some radios or users, a computer interface might make things faster to use, especially the more menu driven the radio

- for others, the button-heavy analog radios might make the most sense

Any time you can try out a radio, do so, even if you are not planning on buying one; you will learn a great deal about various radios that way

- for example, if you get a chance to go to field day, work several of the stations if you can just to experience the different radios

- if you are in the market for a radio then by all means try out as many as you can

- in a few weeks we will be talking about buying new and used equipment, just in time for this year's Dayton Hamfest

- even if you are not ready to buy something, the hamfest is a great place to see all the different new and used radios available

An Example

Even as simple as mobile radios can be, there are a number of different models and options, even within the same manufacturer.

I will use my main mobile radio as an example, but there are other designs out there, and I am certainly not pushing mine over others – it's just the one I know the best

- I have a dual-band Kenwood V71a

- it is a cross-band repeat capable radio which has independent sides – in effect two receivers which can be operated independently (but only transmit on one side at a time)

- it has two speaker outputs, one for each side, and this is particularly useful for base-station operation; I can listen to two bands at once or the same band, different repeaters

- because there are two bands, I can also use one side for monitoring repeaters and the other side for monitoring aircraft, or public service

- the radio has about 1000 frequencies which can be divided up into 10 groups or blocks

- these blocks can be scanned one block at a time, or I can link blocks. So if I have one block set for repeaters and another block set for aircraft frequencies, I can link the two groups and just scan them.

- I can also just scan memory channels as you might expect, or scan all frequencies

- there is also an option to scan 1 MHz in either direction from the current frequency, useful if you are doing simplex, for example

Another useful scan feature is the ability to set scan limits for a VFO scan – I can set up to 10 ranges of frequencies to be scanned, which is handy for scanning segments of the RF spectrum

- for example, I could set up a range to scan for repeaters between 144 and 146 MHz when driving in a new area, and hopefully find some repeaters on which to operate

- similarly I could set up a scan range to cover the marine frequencies, or the 400 MHz public service frequencies

There are also call channels which can be set up for quick access to local repeaters or default frequencies, very useful for keeping the most used frequencies handy

The radio also has echolink capability, which is not really very common among mobiles, but is definitely a useful feature if you want it

- this is what Cecil uses to bring echolink online for the net each week

- the echolink capability means it has specially reserved memory spaces to hold the info needed to operate through echolink repeaters without having to remember all of the information, as well as a sysop mode for allowing your radio to act as an access point

The radio's microphone allows most functions to be accessed by the mic, including having four programmable buttons to which you can assign various functions of your choice

- while the controls take some getting used to, having a programmable mic and a full set of controls means you hardly have to look at the radio itself, which allows you to keep your eyes on the road more!