Hints for Using an HT Ham radio Successfully

It's easy to connect "NOISE-free" to a repeater that is located right next-door or on a tall mountaintop but connecting to tougher repeaters requires some planning. Here are some things to consider if you're using an "HT" and trying to connect to a repeater that is not line-of-sight or is located far away…

1. Make sure your HT is set for maximum power out. Unless you're standing right next to the repeater your HT usually needs all its power. (if experience shows you can reduce power, then do so)

2. Position yourself BEFORE you transmit! Connecting to a repeater on UHF/VHF is VERY location dependent – just moving a foot or two can make a huge difference. So, take time BEFORE you try to transmit to find the best location around where you're standing by looking at the "S meter" and LISTENING to the repeater – if you have only a few bars listening then you are going to be scratchy when transmitting. So just walk around a few paces while listening to find a spot where you have "S-9" bars, or as many as you can find.

3. Almost all FM repeater antennas have vertical polarization and for maximum effectiveness your HT radio/antenna must also be held vertically. Holding it horizontally or on the diagonal will reduce the gain into the repeater by as much as 8-10dB (1/8 – 1/10!). Watch out because it is very easy to forget the holding angle when talking into your HT!

4. HT " rubber ducky" antennas are all awful and at best offer 0 dB gain and that becomes important since HTs have relatively low transmit power compared to mobile radios. You will see Hams using longer whips or antennas with loading coils on their HTs, which can add a few dB but comes at the cost of being more unwieldy and putting more strain on the antenna connector. If you are not moving around, then just a stringing-up a simple j-pole antenna with a flexible lead that will provide actual gain.

5. The VHF/UHF frequencies we use travel mostly line of sight and ANY object (including heavy shrubbery or your own body) will degrade the signal. The VHF frequency is somewhat better at penetrating through or bending around buildings, vegetation and people than the higher frequency UHF. So, the more you can position yourself for a direct line of sight and avoiding things being between you and the repeater location (including your body) the better chance you will have for noise-free communication.

   If you must operate from inside your house, then moving to a window with a site line to the repeater will always be better than inside the house through walls. The antenna height on your HT is a key factor too – if you have a choice and can move to a location where the antenna is higher you will be rewarded with a better signal. Similarly, mounting a flexible j-pole as high as you can, or better yet using an exterior base antenna with gain will greatly improve your communication while operating indoors. (this is doubly true operating inside a moving vehicle)

6. Always check battery voltage when you get home or before you leave home. A battery approaching depletion may work fine on receive but collapse on transmit with distortion or not work at all. We see this from time to time because if you only use the HT for Monday Nets it is very easy to just forget about recharging the battery.

   Also, know what kind of battery your HT has installed. In the old days Ni-Cad or NiMH battery performance suffered if you didn't occasionally discharge them fully but that is no longer the case with lithium cells. Batteries deteriorate with use/age and eventually will not hold a charge (or only for a short time) and will fail to cleanly transmit or at all. When buying a replacement for an older model see if there is a Lithium type available for your radio as they have much better performance than older types.

7. Consider using alternative repeaters. We have both VHF and UHF repeaters connected during the Net. Make sure you have both repeaters programmed into your HT and try the UHF if the regular VHF isn't working at your location.

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