# Operating A 2-Meter Ham Radio

## For The Unlicensed Folk

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First and foremost, it is ***ILLEGAL*** by federal law to transmit (talk) on any amateur frequency with out the proper license (unless a licensed control operator is present). The only time it is permitted is during a real emergency. You (unlicensed) borrow your friend's truck and he is a ham operator. You run out of gas, this does not justify you using his ham radio. This is not a real emergency. Now, if you are in your ham friend's truck and you happen to see a house on fire or a motor vehicle accident with serious injuries etc etc, now you are justified in using the radio to try and summons help.

Using it is no problem. So what if you don't have a call sign, you can still get help. You will need a slight knowledge of a ham radio and how it works. Knowing some frequencies would come in handy too.

The ***NATION WIDE*** 2-meter calling frequency is simplex ***146.520*** MHz (megahertz). Many hams monitor or scan this frequency. In some states, the state police also monitor this frequency….which I think is an excellent idea. I have seen signs on I-95 in Massachusetts saying "State Police 146.52". That would be a good frequency to start on.

I'll be upfront. If the radio isn't programmed and you can't get anybody on 146.520, you're probably hosed. Even if you start tuning through frequencies and hear somebody, that doesn't mean you can talk to them. They might be on a repeater which requires a frequency shift and possibly a PL tone to allow access. You can't just pick up a ham radio w/o having an idea of how everything works and start programming it.

Ok, let's define some things-

**Simplex**- Simplex means that you transmit AND receive on the SAME frequency. You talk from radio to radio, no repeaters involved. Simplex is just like using a CB radio.

**½ Duplex**- A typical repeater. Half duplex means that you transmit and receive on 2 DIFFERENT frequencies. Let's say that you look at a 2-meter repeater listing and see "145.430 - " That - sign means that there is a minus offset (frequency shift). In 2-meters that will be .600 MHz. (notice the period before the 600) That is the typical frequency shift. Some repeaters might be different, if so, they should be listed with either the input frequency or the shift. 145.430 minus .600 equals 144.830. That means you need to program your radio to listen on 145.430 and transmit on 144.830. With the half duplex, you are talking on one frequency, while the repeater listens to YOU and simultaneously retransmits YOUR signal on another frequency. Whomever you are talking to listens to your signal after it goes through the repeater. (If you're still confused, hopefully it'll clear up in a little bit).

**Repeater-** A repeater can be thought of as a "tower" on a mountain. It greatly extends the range of handheld, mobile and base stations. A repeater listens to your signal while at the same time re-transmitting it for somebody else to hear. What makes repeaters tick?

Ok, the odds are your friend's radio already has simplex and repeater frequencies programmed in to it. If it has a button that says "CALL", try pushing it. Most likely it'll take you directly to 146.520. If not, press it again and it'll pop back to the previous frequency.






I'm going to describe how to use a Radio Shack HTX-212. It is a simple straight forward radio w/o all the bells, whistles and fancy stuff.

Here are some common buttons and knobs you'll see on about any radio.

PWR=power

VOL= volume

SQL=squelch (turn this counterclockwise and then clockwise just beyond the point of where the static stops)

M-CH/TUNE= Memory channel or tune knob. This will select the frequency in the VFO mode or memory channel in the memory mode.

Low/High= Switches the transmitter between low and high power

VFO button= variable frequency oscillator. This is where frequencies are manually selected.

MEM/MR= puts the radio in to memory mode.

Those are the only things you should have to play with.

- **Making A Call-**

Ok, so your friend's radio is programmed. The scenario is…you have borrowed your friend's truck and you come across a head on collision. There are some other people there trying to call 911 on cell phones, but there is no phone service. You get out and find that there are 4 people injured. EMS is needed NOW! You go back to the truck and turn on the radio. Odds are, it'll power up and display a frequency your friend uses often. Many areas use a "local" simplex or repeater frequency. I recommend trying this first. On the HTX-212 the power level is to the right of the frequency. If it says HIGH, you're good to go. If it says LOW, push the button between the volume knob and power button, then it will say HIGH.




Pick up the mike and push the PTT (push to talk) button. It's typically located on the side.

Say "MAYDAY, MAYDAY, MAYDAY, this is (insert your name). I am at a car accident and I need help." Then release the PTT and wait a few moments for a response. Try it a couple of times and if no response try 146.520. Say the same thing. If there's no response there, try some more of the frequencies in the memories. If you find one that has a + or - sign displayed with it, this means that it's a repeater frequency.

Ok, once somebody answers you be ready to at least provide them with-

**What happened**

**Where the scene is**

**How many are injured**

Of course the more info you can give the better. Is a vehicle upside down? Has anyone been ejected? Are there kids involved? Is there entrapment? Etc etc.

Once you have given the information don't abandon the radio. If you're going to leave the truck, crank up the volume so you can hear if somebody is trying to get back in touch with you.

NOBODY should ever chastise you for using a ham radio in a true emergency.