

Note: We will be recording all Bootcamp Sessions. Anyone not wishing to be recorded should mute their video or disconnect.



# PUTTING TOGETHER A STATION FOR REPEATERS AND MORE

Ham Bootcamp

Spring 2023

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# Station Building – How to start?

Begin by asking yourself these questions



1. What do I want to do with my station now and 1-2 years from now? What are some of my longer-term goals?
2. Do I plan to upgrade to the next license level soon? How will the upgrade change what I want to do?
3. What is my budget? How do I want to spread my investment in a station out over time?
4. What space do I have for my station?
  - Shack – your QTH and your vehicle if applicable
  - Space for antennas – outdoors, your vehicle, indoors
  - Will you be operating in a “portable format”? What will that look like?
5. How much of the setup of antennas and a shack can/do I want to do myself?
6. Do I have any neighbor, spouse or family considerations?

# VHF/UHF Station Considerations

Before you buy an expensive HT, consider...

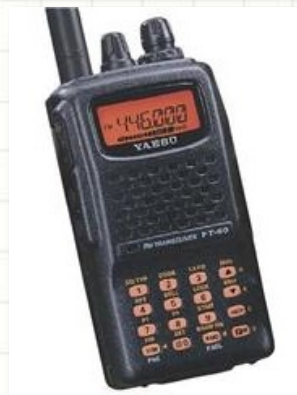
- Where will I be when I have the most time to operate?
  1. My vehicle
  2. My home
  3. Walking around portable
- How much portable operating will I really do?
  1. Fox Hunting
  2. FM EasySats
  3. Parades and other portable-centric activities



Most of us start with an HT when we get our first license. This is OK but think hard before you spend a lot of \$\$ on your HT...

# Choosing an HT

How will I operate portable?



- Most new Hams are best served with an inexpensive HT with a good antenna and programming software
  - HT cost can range from \$35 to \$500 or more
  - A Dual-Band BaoFeng or an inexpensive Yaesu HT are good choices
  - Get a quality antenna from Diamond (~\$35)
  - Easy to use Programming SW and Cable (ex. RT Systems ~\$50)
- Think hard about expensive digital features, radios with built-in GPS, fancy displays, etc.
  - Will you really use your HT enough to justify the cost?
- Save your hard earned \$ for the radio you will really use...

Get with a friend and check/adjust your audio (mic gain) and signal strength (power level/antenna) on the air



# Mobile and Base Radios

2m/70cm Dual Banders and Special Applications



Lots of good choices in 30W-50W Radios. Also specialized choices for HF/VHF/UHF and Emcom use.

# Mobile Radios

## Considerations



- For many Hams, a mobile radio will give you the most enjoyable chance to operate using local repeaters
  - Repeaters are most active during commuting hours
  - This is a great way to pass the time when driving **IF** you install your radio in a **safe to use way**
- Select a radio that is intuitive and easy to use
- **SAFETY**: ***You need to keep you eyes on the road & your hands on the wheel***
  - Radios with separable control heads that can be mounted near the instrument cluster are the best choice.
  - Make sure your radio, control head, and microphone are **SECURELY** mounted in your vehicle. There are many useful mounting options...
  - Carefully follow the manufacturer's recommendations for battery/power connections and fusing - **DO NOT USE THE LIGHTER SOCKET!!!**
- Select a good quality antenna and install it securely on your vehicle
  - A permanent mount with an NMO antenna connection will usually be best
- Route all wiring carefully so that it is not pinched, crushed, loose, etc.

Get with a friend and check/adjust your audio (mic gain) and signal strength (power level/antenna) on the air

# Mobile Radios

Example Installation – AB1QB/M





# Antennas for 2m/70cm Repeaters



Quality HT  
Antenna



Mag Mount  
Mobile Antenna



NMO Mount  
Mobile Antenna



Base Station  
Antenna

## Things to Consider:

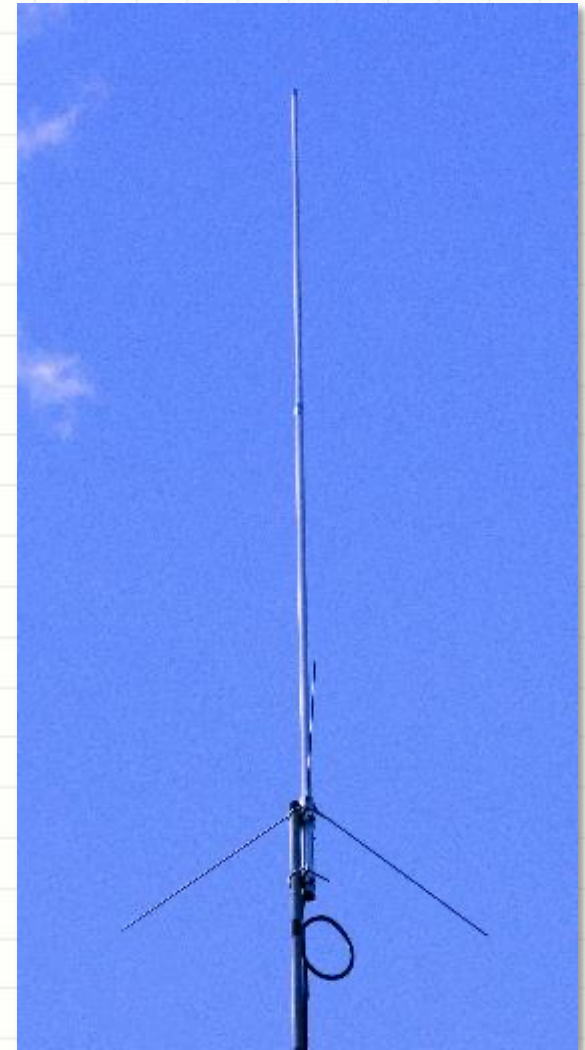
- Antenna is the most important part
- Radio Power
- Distance to Repeaters
- Ease and permanence of installation
- Cost



# First VHF/UHF Base Antennas

Dual-Band 2m/70cm or 2m Verticals

- Easy to install
- Feed with low-loss coax
  - LMR-400uF is best,
  - RG8X can work if the run is short (< 25 ft)
- Mounting options:
  - Edge of roof
  - Balcony
  - Deck rail
  - Mast
  - ...



Diamond and Comet are good choices

# Some Thoughts on Used Equipment



Be Especially  
Careful Buying  
Used Gear Online

- Buy from a reputable source
  - Can you test the gear on the spot?
  - Can you return the equipment if it doesn't work?
- Enlist the help of an Elmer
- If it's a "fixer upper", can you secure the needed parts? Can you handle the necessary repair and re-alignment?
- The "bargain" is often times not really one... or you may get more than you "bargained" for...

# Questions?

## To Learn More:

Check out the Nashua Area Radio Society's Tech Night Program at:

[n1fd.org/tech-night](http://n1fd.org/tech-night)

Become an Internet Subscriber (or members of NARS):

[n1fd.org/join-us](http://n1fd.org/join-us)

Much more information, pictures and video are available on our Blog at:

[stationproject.blog](http://stationproject.blog)

