

# WØTLM January 2018 Presentation



WØTGE



10-10 # 58787

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You have your rig. It's the greatest rig that anyone has ever had. But there's one problem, you have no way of letting the RF out so you can talk to someone. Sure, there are lots of sites selling antennas, but they cost money. Wow, the transmission just went out on the car. The kids need new clothes. The tuition is due. Your stomach says feed me. What can you do?

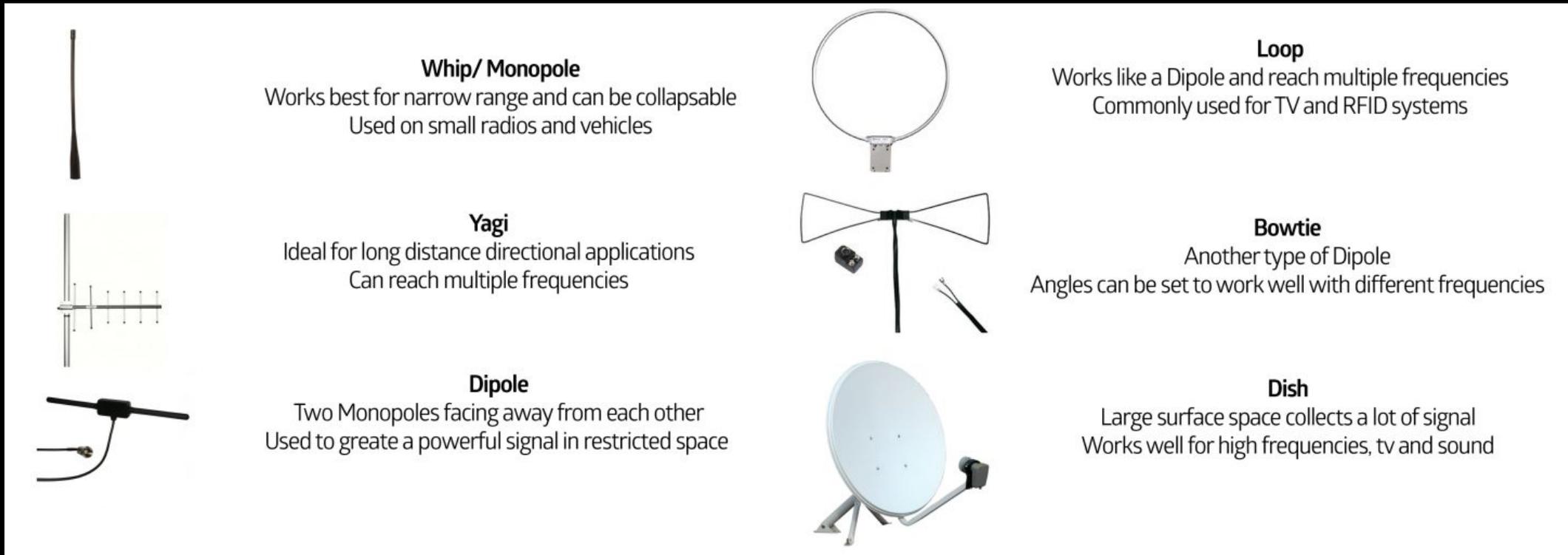
# Build Your Own Antenna

Why do I need an antenna?

Inside that great transmitter, your voice or keyer signals are changed to radio frequency oscillations that need a way to be launched into the sky. That launching object is called an antenna.

# Build Your Own Antenna

There are different types of antennas for different operations



Credit: <https://www.rfsolutions.co.uk/blog/2017/08/rf-basics-antenna-types-and-characteristics/>

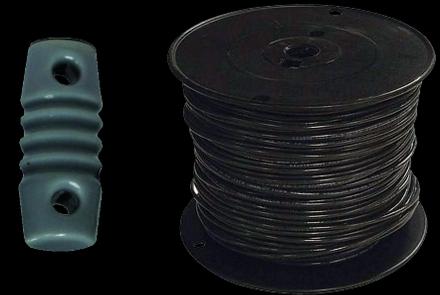
# Build Your Own Antenna

Can you build your own antenna. YES!!!

And for the most part it doesn't take exotic equipment. If you can pass a ham radio license exam, you can build your own antennas.

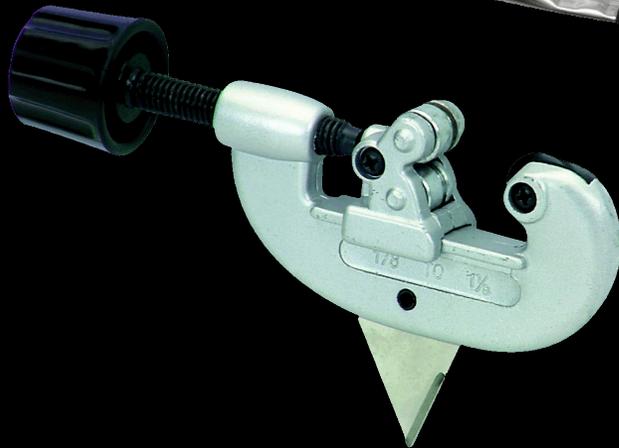
# Build Your Own Antenna

Materials for building antennas.



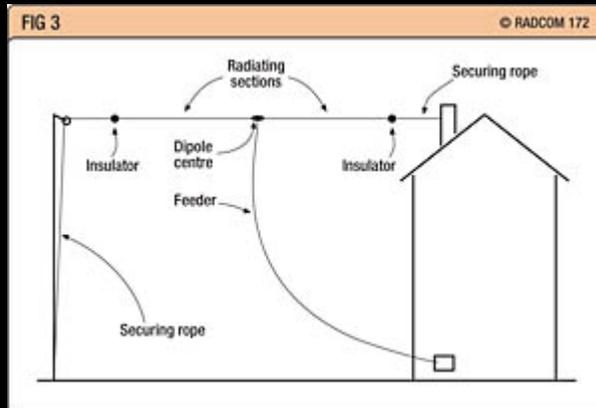
# Build Your Own Antenn

Equipment for building most antennas



# Build Your Own Antenna

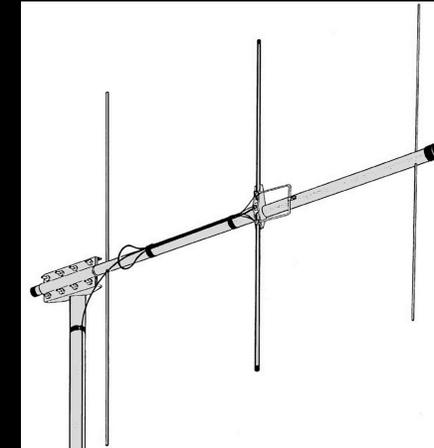
What antenna to build?



<http://rsgb.org/main/get-started-in-amateur-radio/antennas/your-first-antenna-the-half-wave-dipole/>



[http://www.sirioantenna.com/index.php?main\\_page=product\\_info&products\\_id=204](http://www.sirioantenna.com/index.php?main_page=product_info&products_id=204)



[https://www.dxengineering.com/parts/hgn-vb23fm?seid=dxese1&cm\\_mmc=plagoogle\\_-\\_shopping\\_-\\_dxese1\\_-\\_hy-gain&gclid=Cj0KCQiAv\\_HSBRCkARIsAGaSsrD2L8udJK4NoXHj8rDtpYOvXTMIuHsL9TUmR9Mdgbr3suhu\\_3VJ8goaAsXTEALw\\_wcB](https://www.dxengineering.com/parts/hgn-vb23fm?seid=dxese1&cm_mmc=plagoogle_-_shopping_-_dxese1_-_hy-gain&gclid=Cj0KCQiAv_HSBRCkARIsAGaSsrD2L8udJK4NoXHj8rDtpYOvXTMIuHsL9TUmR9Mdgbr3suhu_3VJ8goaAsXTEALw_wcB)

# Build Your Own Antenna

Building antennas does require learning some skills. Soldering copper pipe is one of those skills and it is not hard to learn.

Soldering video

<https://youtu.be/CkcVg-OgXU>

# Build Your Own Antenna

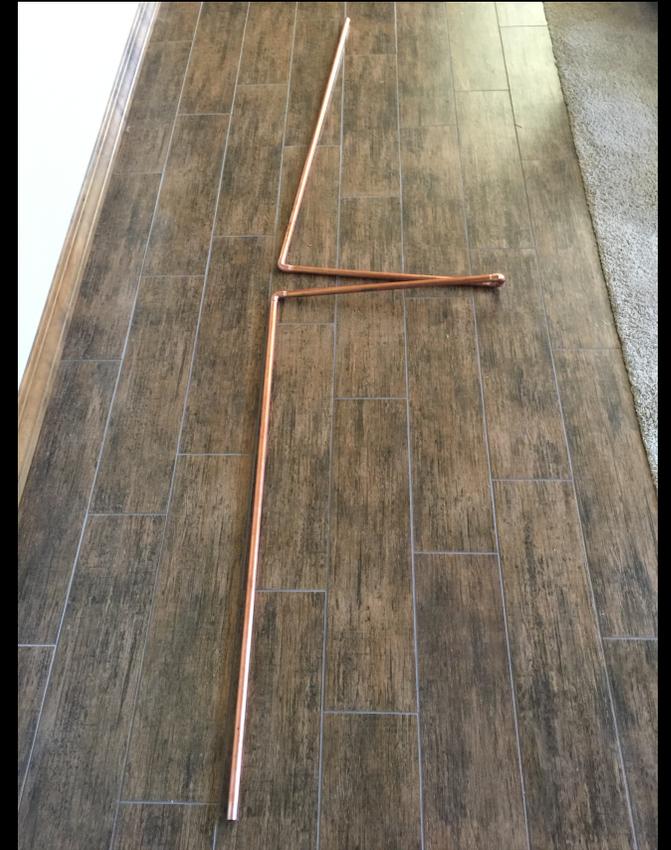
## Construction layout techniques

This is how you imagined the antenna will look like after it is assembled



# Build Your Own Antenna

But darn, this is what the antenna looks like as you try to wrestle it and get it soldered together.



# Build Your Own Antenna

Using these layout blocks and soldering pad (all the same thickness), the job becomes easier and you construct a “squared and aligned” antenna



# Building Your Own Antenna

Use SWR meters or antenna analyzers to tune your antenna for frequencies that will be used



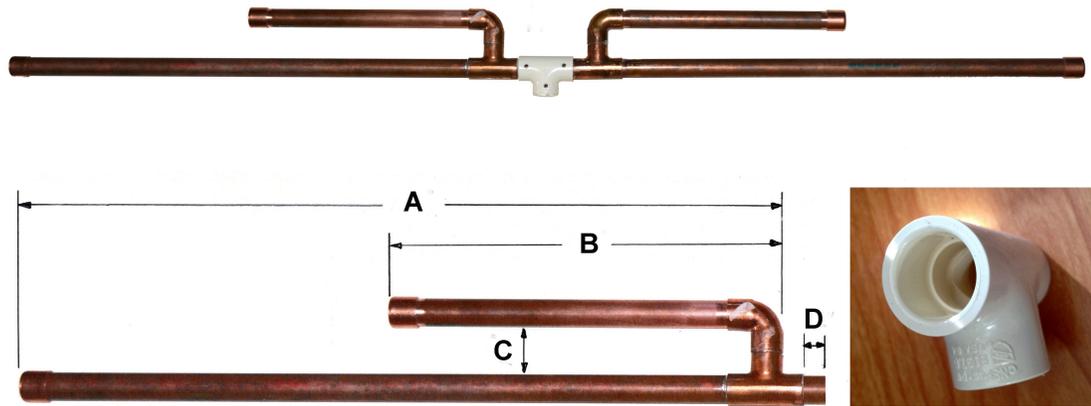
[https://www.amazon.com/RF-Power-SWR-meter-1-8-525Mhz/dp/B00579E6RW/ref=sr\\_1\\_11?ie=UTF8&qid=1516059894&sr=8-11&keywords=swr+meter](https://www.amazon.com/RF-Power-SWR-meter-1-8-525Mhz/dp/B00579E6RW/ref=sr_1_11?ie=UTF8&qid=1516059894&sr=8-11&keywords=swr+meter)



[https://www.amazon.com/KKmoon-Shortwave-Antenna-Analyzer-Tester/dp/B073WWTTXC/ref=sr\\_1\\_1\\_ssp\\_a?ie=UTF8&qid=1516059894&sr=8-1-spons&keywords=swr+meter&pssc=1](https://www.amazon.com/KKmoon-Shortwave-Antenna-Analyzer-Tester/dp/B073WWTTXC/ref=sr_1_1_ssp_a?ie=UTF8&qid=1516059894&sr=8-1-spons&keywords=swr+meter&pssc=1)

# Build Your Own Antenna

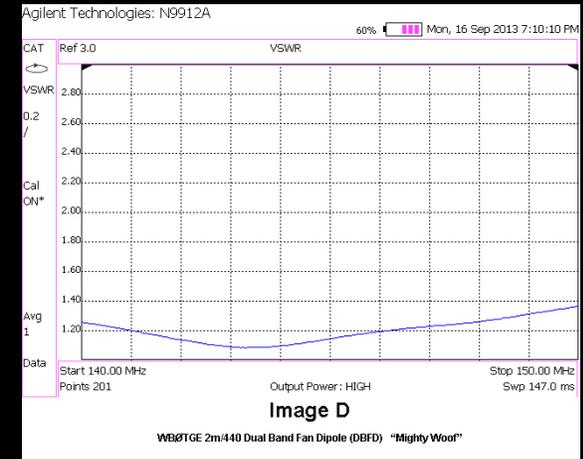
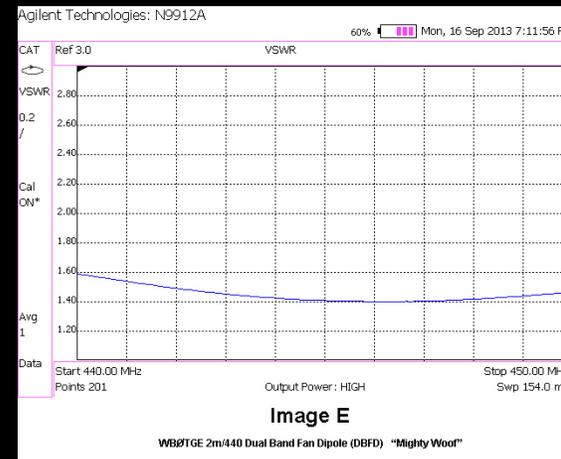
“Mighty Woof” 2m/440 antenna designed by  
Al Andzik – WBØTGE



A = 16 1/2" B = 8 3/4" C = 1 1/16" D = 1/2"

Image A

WBØTGE 2m/440 Dual Band Fan Dipole (DBFD) “Mighty Woof”



# Build Your Own Antenna

Sites for great antenna designs and construction tips

<http://www.hamuniverse.com/antennas.html>

<http://www.qsl.net/kd4sai/antencal.html>

<http://www.qsl.net/kb5wck/antenna.html>

<http://www.arrl.org/building-simple-antennas>

<http://www.arrl.org/your-first-antenna>

<http://www.hamuniverse.com/antennas.html>

[http://www.amateurradio.bz/ham\\_radio\\_antenna.html](http://www.amateurradio.bz/ham_radio_antenna.html)

Soldering video

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