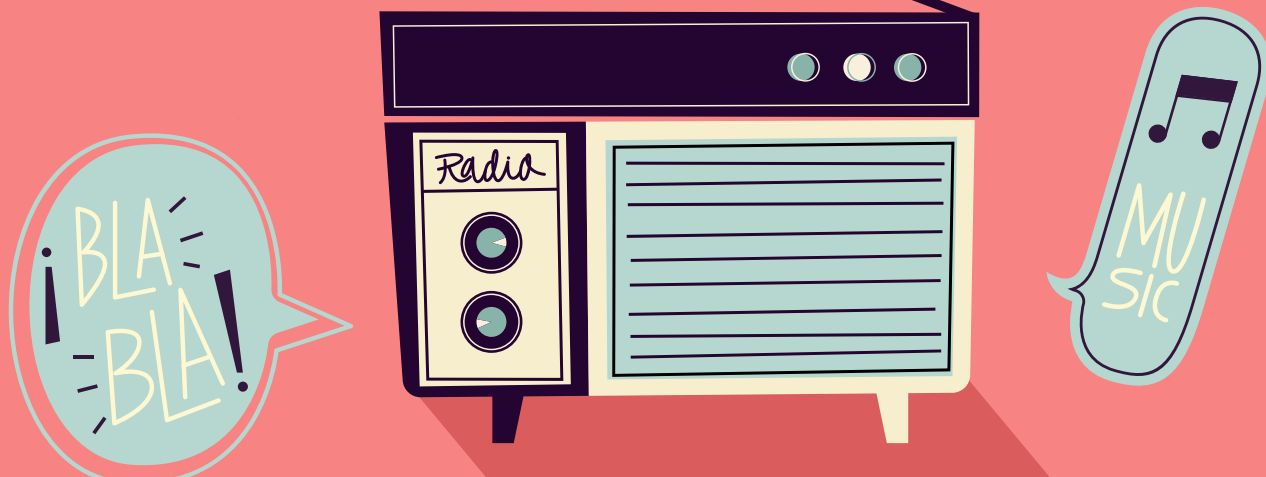


ANTENNA MAST QUARTERMASTER PROJECT





DESCRIPTION

01

BENEFITS

02

COSTS AND FUNDS

03

SCHEDULING

04

HELPERS

05

SAFETY HAZARDS

06

WHO AM I?

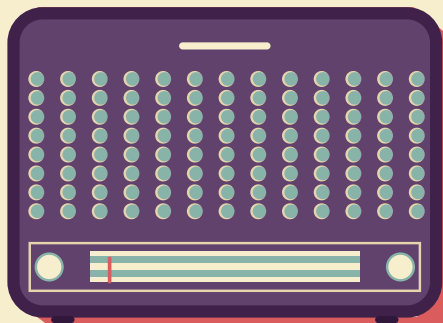
School: North Broward Prep
GPA: 4.31
Volunteer Hours: 572 hours
AP Scholar with Distinction
Order of Arrow Member
SCUBA Club Vice President
Boatswain of Ship 238

NAUI Master Diver
Done Over 100 Dives
I have spent over 70 days
living on the water
Lifeguard Certified
Currently rebuilding 2
Catalina Capri Sailboats

What is my favorite part of Scouts?
Getting to teach my scouts
Why Do I want to be a Quartermaster?
To prove to my Scouts that it's possible



01



DESCRIPTION

WHAT IS AN ANTENNA MAST

Basically, the antenna mast I am building is 40 ft of pipes connected together with antenna of various bands inside. These bands include: Medium Frequency (MF: 0.3-3 MHz), High Frequency (HF: 3-30 MHz), Very High Frequency (VHF: 30-300 MHz), and Ultra High Frequency (UHF: 0.3-30 GHz).



The antenna inside will be trailed underneath the building and then connected to the floor of the radio room after a hole is drilled through the floor. At that point the Coast Auxiliary Flotilla 34 will then be able to use the antenna from the Antenna Mast.

HOW WILL IT BE SUPPORTED?

BASE

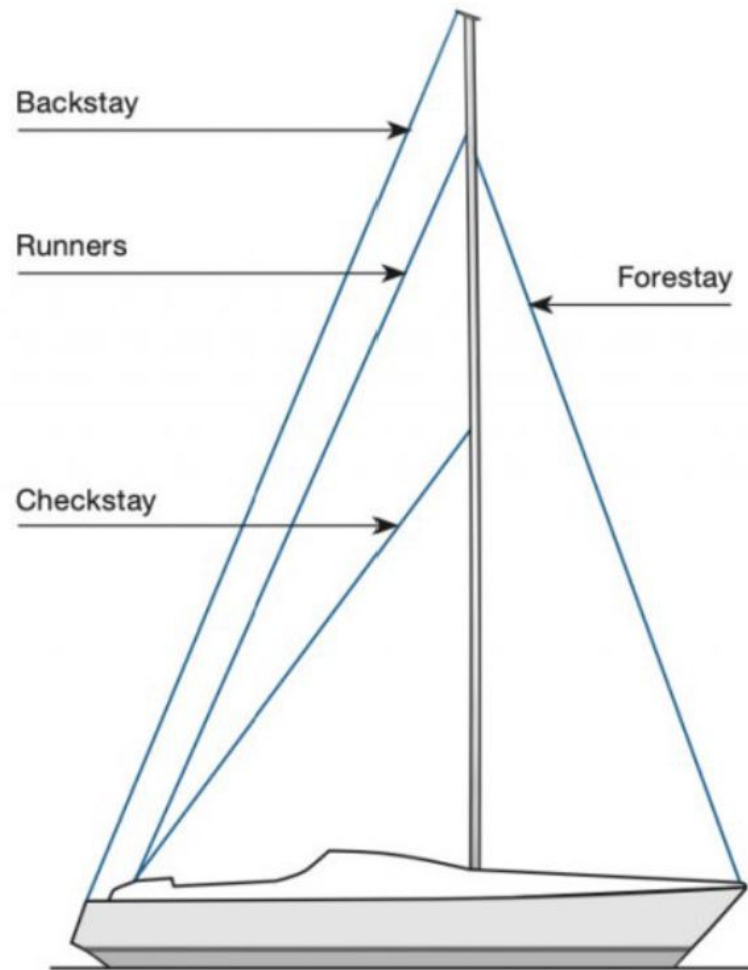
A 3 foot hole will be dug out where the antenna mast will stand. The base will be made out of concrete with drainage rocks at the bottom of the base.

LATERAL SUPPORT

There will be an anchor attaching the Antenna mast to the building 6 feet above the ground. Although it seems small this will add lots of additional support.

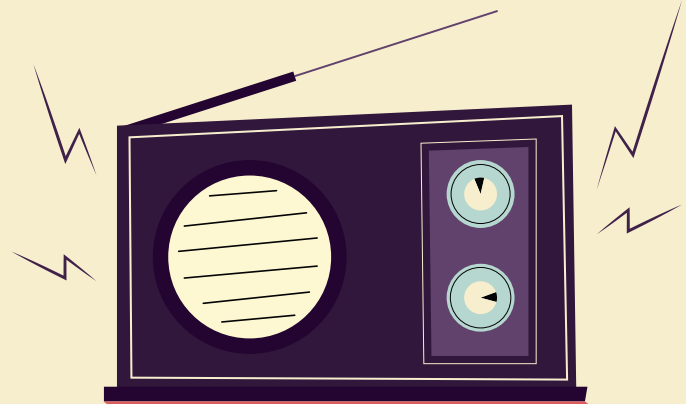
STAYS

Although they are not actually stays I am referring to the MF and HF antenna lines as stays. Because they will be arranged into an upside down V shape to help hold the antenna mast just as stays on a boat would hold the mast



02

BENEFITS OF MY PROJECT



Some of the bands that will be in the antenna mast have what is known as a “line of sight” range. What that means is that it can only transmit to what the top of the antenna can see, building and trees obstruct its range. So lifting the antenna high using an antenna mast lifts it above those obstructions and allows a greater range.

However it isn't just “line of sight” bands that get better range from higher antenna, all bands get better range from higher antenna. And since there is currently nothing lifting up any of the antenna at Coast Guard Auxiliary Flotilla 34's Base at Asdorf Park, the radio room there is hardly used. So my project would jumpstart the usage of that room and allow them to actually put all of the radios in that room to work.

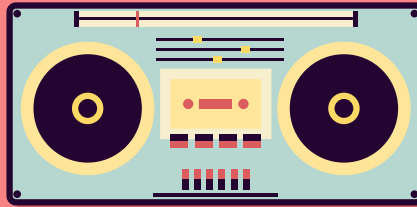
WHY DID I CHOSE A PROJECT THAT WILL HELP THE COAST GUARD AUXILIARY FLOTILLA 34?

Coast Guard Auxiliary Flotilla 34 is my ship's charter Organization, and greatly due to them chartering us ship 238 was able to start up. But, they didn't just sign their name on a paper, the Flotilla as a whole and each individual member is constantly seeking out new and different ways to help my ship and my scouts. Because of them we get access to free CPR and First aid training and our last ILSS took place at a Coast Guard Base, where we got to practice man overboard training with the Coast Guard themselves. Building this for them is my way of attempting to show thanks to them. And I believe that having my Quartermaster project be for them is very symbolic for how they were there at the start of my Sea Scouting journey and they are here at the end too.



COSTS AND FUNDS

03



COSTS

The total cost comes out to be \$624.32

After presenting to the Coast Guard Auxiliary Flotilla 34, I was informed the Coast Guard will use their Tax ID to purchase the items with me, and they are tax exempt.

The funds are given to me by:

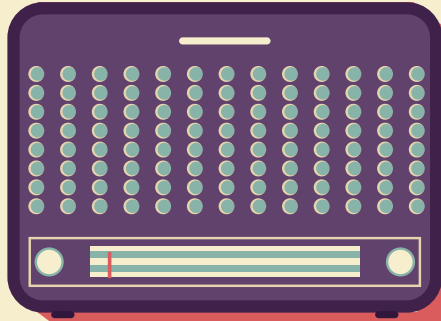
Emmanuel Nina: \$382.02

Coast Guard Auxiliary Flotilla 34: \$232.32

John Papalia: \$200

Material	Quantity	Total Cost
10 feet PVC pipe 2" diameter	8	\$239.30
Copper Ground Rod	2	\$51.80
12" x 12" x 6" Junction Box	2	\$112.96
2" 90-Degree Elbow PVC	2	\$11.96
2" PVC Fitting	2	\$6.22
2" PVC Fitting Nut	2	\$3.40
PVC Solvent Cement	1	\$6.53
Solid Copper Ground Wire	30	\$56.40
Sealing Putty	1	\$13.98
Fast Setting Concrete Mix	3	\$21.51
Gravel	2	\$9.96
Rebar	2	\$34.52
1x12 4ft Common Board	4	\$55.78

04



SCHEDULING

SCHEDULING

01

- Dig the 3 foot deep hole for the base (must be large enough for the 3" mast sleeve)
- Lay the gravel bed for water drainage
- Cut and assemble the casing for the concrete flat top with rebar enforcement
- Mix and pour concrete. Let it cure overnight

02

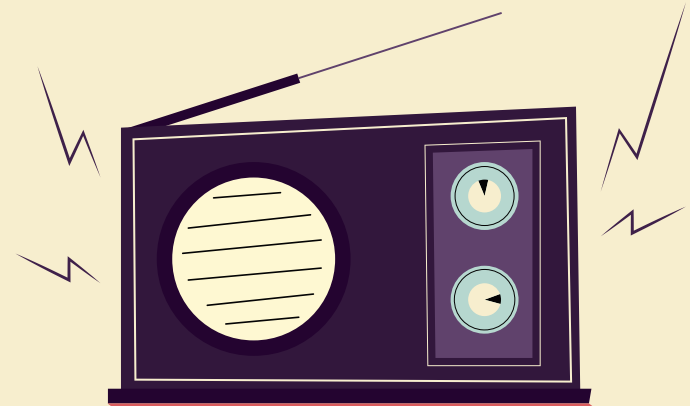
- Measure, cut and assemble feed line conduit. Glue spans together and push through to the other side of the building
- Drill and assemble connector boxes
- Feed coaxial cable through conduit (x4)
- Affix connection boxes to structure
- Solder connectors and install recover line, close connection boxes

03

- Install mast with block, VHF antenna array, and hoisting line
- Attach block and hoisting line to Sheriff Office's antenna mast
- Secure guide wires. Attach HF antenna to VHF assembly and hoist
- Connect the antennas and test

05

HELPERS



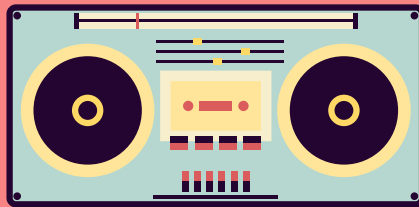
WHO WILL HELP ME?

- All of my scouts will help me (13 other scouts) with the labor portion
- My Skipper and Emmanuel Nina will help me with the labor portion as well but it's also important to note their contributions already, my Skipper's knowledge of radios has been immensely helpful in construction the draft of this project. Emmanuel Nina has not only helped in funding the project but has also given my lots of pointers for when construction the base of the Antenna Mast, and it's very helpful because I want to construct this mast correctly so it will last.
- The treasurer of the Coast Guard auxiliary Flotilla 34 is speaking to the mayor and helping me get a permit

This project is not possible without everyone who has helped me and who will help me. I am forever grateful to everyone who has and will be a part of this project.

SAFETY HAZARDS

06



SAFETY HAZARDS

HEAT EXHAUSTION

To avoid it I will make sure everyone is very well hydrated and continues to hydrate

If some feels a little ill I will make the go in the shade or in the air conditioning, if they're not getting better, ice packs will be put in heat pockets

CUTS AND SCRAPES

Cuts and scrapes can happen anywhere, from falling or cutting themselves on an object to avoid it I will make sure there is no horseplay and everyone is being as safe as possible

If someone does get cut Skipper carries a first aid kit. All cuts will be attended to immediately

SUNBURNS

To prevent it I will make sure everyone helping is regularly applying sunscreen

If someone does get sunburnt I will have a aloe based lotion on hand



**ANY LAST
QUESTIONS?**