

The N1YIS 2024 GoBox and Portable Repeater Challenge

Detailed Rules

1. Categories for the Challenge

- A. Individual – one licensed Ham Radio Operator
- B. Team
 - 1. A team of up to three non-family related amateur radio operators may participate in the building of the project.
 - 2. A family team of amateur radio operators of any number is permissible. Family team will be defined as: Grandparent to grandchildren extending out to first cousins. The family team may have any number of amateur radio operators.
 - 3. Neighborhood team consists of one or two amateur radio operators and their neighbors.

2. Project Categories for the Challenge

- A. The GoBox
 - 1. Must contain at least one radio and a way to power it for at least a 12 hour operational period. Which means the radio does not have to be on for the entire 12 hours but must be able to run 10 minutes each hour during the 12 hour period.
 - 2. Be able to run without commercial power for the minimum 6 hour operational period.
 - 3. May be of any size, however the weight limit is limited to a two person carry of less than 67 lbs (30kg). Points will not be awarded for GoBoxes over this weight.
This includes:
 - a. Radios, antenna masts, and antennas
 - b. Power source: solar panels, batteries, wind turbines, etc...
 - c. Antennas
 - 4. May have new, used, and/or homebrew equipment.
 - 5. Design must contain devices to neutralize potential hazards, i.e. safety switches, fuses, circuit breakers.

3.

- A. Portable Repeater
 - 1. Must be less than 67 lbs and this includes:
 - a. radio(s), controllers, antenna masts and antennas
 - b. Power source: Solar panels, batteries, wind turbines, etc..
 - c. cart, drone (UAV), robotic land vehicle (ULV)
 - 2. Must be safe to operate.
 - 3. May use new, used, and/or homebrew equipment.
 - 4. Design must contain devices to neutralize potential hazards, i.e. safety switches, fuses, circuit breakers.
 - 5. Must have a way to control or deactivate the repeater to either by remote control or by wire.
 - 6. Must be able to operate for no less than 12 hours.
 - 7. Must be able to run without commercial power for a minimum 6 hour operational period.

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8. May be of any size however the weight limit is limited to a two person carry of less than 67 lbs (30kg). Points will not be awarded for Portable Repeaters over this weight.

4. Safety requirements:

A. Please Note:

1. All devices must conform to FCC Part 97 rules.
 - a. <https://ecfr.io/Title-47/Part-97>
2. All devices must be of good engineering practice and design.
3. All devices must be safe to operate over an operational period of 12 hours.
4. All flight devices must comply with FAA rules and safety guidelines.
 - a. <https://www.faa.gov/uas>

B. GoBox

1. Must:

- a. Be physically and structurally sturdy enough to be carried over 100 feet.
- b. Have a way to connect to a RF ground.
- c. Contain a ground wire.
- d. Have components fastened into the unit.
- e. Contain fuses or circuit breakers to protect the equipment and operators.
- f. Be wired properly with insulated wires that have either insulated solder connections or insulated connectors.
- g. Be able to demonstrate by making two way contacts.

C. Portable Repeater

1. Must:

- a. Be physically and structurally sturdy enough to be carried over 100 feet.
- b. Have a way to connect to a RF ground.
- c. Have components fastened into the unit.
- d. Contain fuses or circuit breakers to protect the equipment and operators.
- e. Be wired properly with insulated wires that have either insulated solder connections or insulated connectors.
- f. Be able to demonstrate by making two way contacts through the repeater.