

# FIELD DAY Antennas



**Presented by Mahoning County ARES**  
**(with contributing material by K9JY)**

# FIELD DAY Antennas

- Field Day is an emergency preparedness exercise...
- We are working as if we are really “in the field”
- Rapid deployment attributes:
  - Simple pre-planned solutions
  - Proven performance (a.k.a. tested)
  - Nimbleness & flexibility
  - Quickly set up & take down
- Field Day antennas need to reflect these attributes
- **Simpler is better**

*You see things; and you say "Why?" But I dream things and say "Why **not?**" (George Bernard Shaw)*

# FIELD DAY Antennas

- Remember the Ham Radio rule:  
“Everything will actually take twice as long as you think it will”
- Sometimes lower is better:  
Field Day is about contacts in the US & Canada
- Horizontal may be better than vertical for HF



# FIELD DAY Antennas

## VHF / UHF – Mag Mount with a twist

### *Mag Mount*

- Vehicle antenna with a ground plane
- Mounted to a field or portable mast

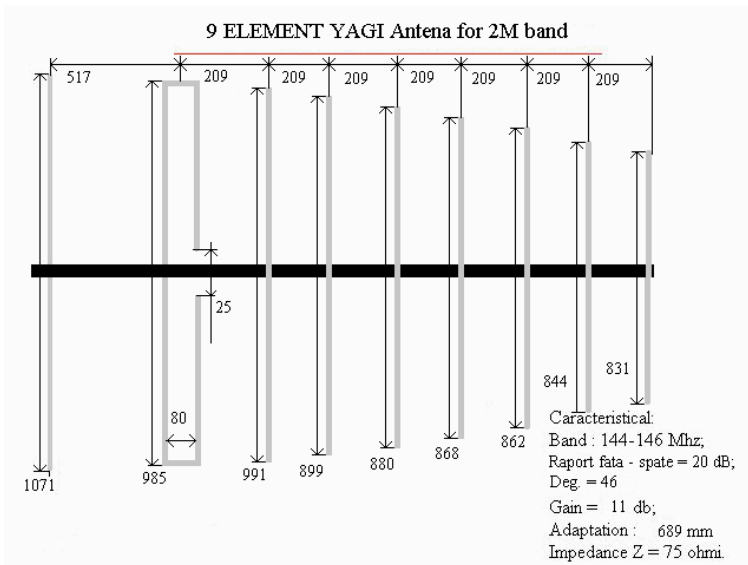


# FIELD DAY Antennas

## VHF / UHF – Simple Yagi / Beam

### *Yagi / Beam*

- Mounted to a field or portable mast
- Use simple rotation device to point the antenna



# FIELD DAY Antennas

## HF – Consider the Humble Dipole

- Easily constructed with simple materials
- Can be made as a mono or multi-band antenna
- Center “connector” can be easily constructed
- Easily “mounted” to trees and poles
- Can be made to “rotate” if necessary
- Math is fairly straight forward (see table):

(Below 10M)

Above 30 MHz,  $\lambda = 300/f$  metres or  $984/f$  feet

For a half wave  $\lambda = 150/f$  metres or  $492/f$  feet

(10M through 160M)

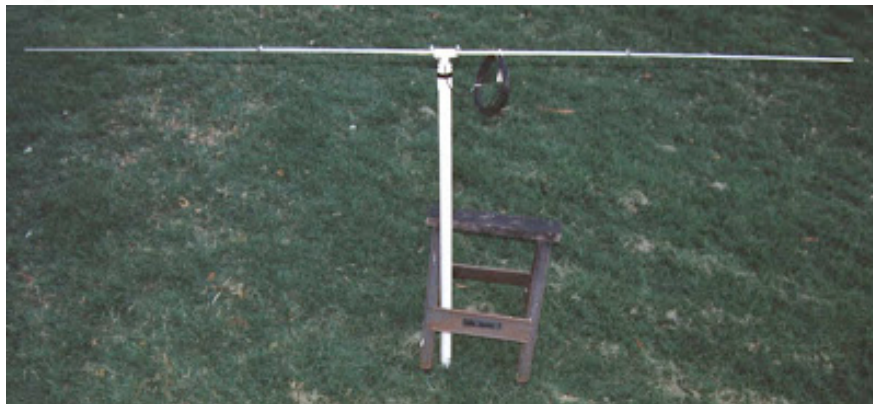
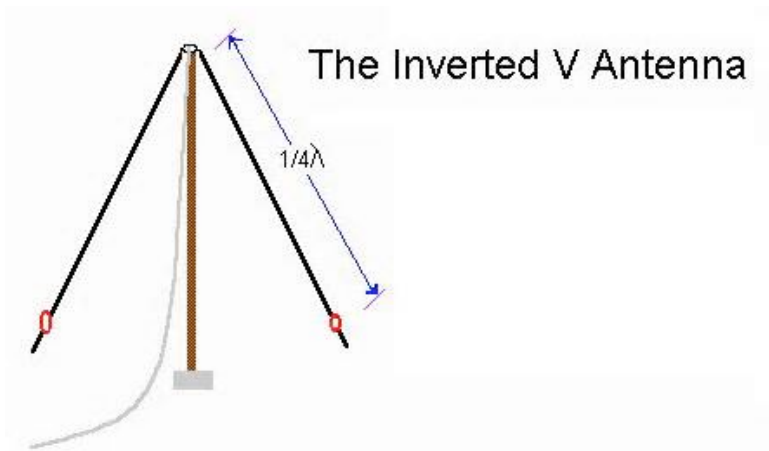
Below 30 MHz  $\lambda = 286/f$  metres or  $936/f$  feet

For a half wave  $\lambda = 143/f$  metres or  $468/f$  feet



# FIELD DAY Antennas

## HF – Consider the Humble Dipole



# FIELD DAY Antennas

## HF – Consider the Humble Dipole

| Dipole Antenna Lengths - In Feet |                   |          |           |          |            |    |      |
|----------------------------------|-------------------|----------|-----------|----------|------------|----|------|
| Band                             |                   | Mid-Band | Full Wave | 1/2 Wave | Dipole Leg | Ft | In   |
| <b>10M</b>                       | <i>Phone</i>      | 28.8     | 32.50     | 16.25    | 8.13       | 8  | 1.5  |
|                                  | <i>CW/Digital</i> | 28.15    | 33.25     | 16.63    | 8.31       | 8  | 3.8  |
| <b>15M</b>                       | <i>Phone</i>      | 21.3     | 43.94     | 21.97    | 10.99      | 10 | 11.8 |
|                                  | <i>CW/Digital</i> | 21.012   | 44.55     | 22.27    | 11.14      | 11 | 1.6  |
| <b>20M</b>                       | <i>Phone</i>      | 14.25    | 65.68     | 32.84    | 16.42      | 16 | 5.1  |
|                                  | <i>CW/Digital</i> | 14.07    | 66.52     | 33.26    | 16.63      | 16 | 7.6  |
| <b>40M</b>                       | <i>Phone</i>      | 7.21     | 129.82    | 64.91    | 32.45      | 32 | 5.5  |
|                                  | <i>CW/Digital</i> | 7.08     | 132.20    | 66.10    | 33.05      | 33 | 0.6  |
| <b>80M</b>                       | <i>Phone</i>      | 3.8      | 246.32    | 123.16   | 61.58      | 61 | 6.9  |
|                                  | <i>CW/Digital</i> | 3.58     | 261.45    | 130.73   | 65.36      | 65 | 4.4  |

| Inverted V Dipole Antenna Lengths - In Feet |                   |          |           |          |            |    |      |
|---|-------------------|----------|-----------|----------|------------|----|------|
| Band  |                   | Mid-Band | Full Wave | 1/2 Wave | Dipole Leg | Ft | In   |
| <b>10M</b>                                  | <i>Phone</i>      | 28.8     | 30.88     | 15.44    | 7.72       | 7  | 8.6  |
|   | <i>CW/Digital</i> | 28.15    | 31.59     | 15.79    | 7.90       | 7  | 10.8 |
| <b>15M</b>                                  | <i>Phone</i>      | 21.3     | 41.75     | 20.87    | 10.44      | 10 | 5.2  |
|   | <i>CW/Digital</i> | 21.012   | 42.32     | 21.16    | 10.58      | 10 | 7.0  |
| <b>20M</b>                                  | <i>Phone</i>      | 14.25    | 62.40     | 31.20    | 15.60      | 15 | 7.2  |
|   | <i>CW/Digital</i> | 14.07    | 63.20     | 31.60    | 15.80      | 15 | 9.6  |
| <b>40M</b>                                  | <i>Phone</i>      | 7.21     | 123.33    | 61.66    | 30.83      | 30 | 10.0 |
|   | <i>CW/Digital</i> | 7.08     | 125.59    | 62.80    | 31.40      | 31 | 4.8  |
| <b>80M</b>                                  | <i>Phone</i>      | 3.8      | 234.00    | 117.00   | 58.50      | 58 | 6.0  |
|   | <i>CW/Digital</i> | 3.58     | 248.38    | 124.19   | 62.09      | 62 | 1.1  |



# **FIELD DAY Antennas**

## **Q & A**



**Come join us at Field Day!**