

RAPID DEPLOYMENT EMERGENCY AERIALS 23 September 2003

In an emergency, the Amateur Radio Operator will have to improvise in the choice of aerials, because of limitations in height and space. There is no substitute for experimentation beforehand. Here are some ideas for effective, rapid deployment emergency aerials.

First, let's get on 80-Meters & 40-Meters, where we probably need only NVIS. Here are three easy designs:

. . . **80-Meter / 40-Meter NVIS Double Dipole**

Two dipoles at right angles to each other
Mounted at a common center feedpoint
Feedpoint about 5-10 feet above the ground
80-Meter dipole ± 121 feet, $\pm 60\frac{1}{2}$ feet per side
40-Meters ± 65 feet, $32\frac{1}{2}$ feet per side

. . . **80-Meter NVIS (3.983 MHz) Horizontal Loop**

± 252 feet overall
 ± 63 feet per side
About 10-20 feet in the air, not critical
Egg insulators, wrapped "around & through" for adjustments
Fed almost anywhere

. . . **80-Meter Random-Length Wire**

As high as possible
Slingshot deployed
Fed through a tuner / match / ATU
Add a "counterpoise" to mimic an off-center fed dipole if at all possible

Next, let's look at 2-Meters, where we will probably need vertical polarization for FM. Here are three ideas:

. . . **2-Meter "Quik-Quad"**

Bamboo Garden Stake Spreaders
-Driven Element Spreader ± 29.2 "
- $\pm 3\%$ for Directors / Reflectors
All held together with small plastic wire ties
Supported by Bamboo Pole, held with wire ties
Thin wire (recycled wall-wart wire? old telephone wire? uni-directional printer cable?)
held at feed-point by a rubber band
Coax-fed, alligator clips

- . . . **2-Meter Rabbit Ears Dipole**
Old rabbit ears
Fed with coax
Lengths marked with magic marker
Around 19" each side
"Scotch" tape to keep the lengths
Supported as high as possible with string
Also suitable for 220

- . . . **2-Meter Moxon Square**
Styrofoam Sheet, 31"x12"x1"
Thin wire pressed into the styrofoam
Formed into the "Moxon" shape & spacing
Coax-fed
High gain!

For 70 cm, it is hard to beat an old (UHF-only) TV antenna, which is nothing more than a high gain broadband yagi.

6-Meters can be extremely useful for reliable communications up to 700 km, digital, and is very good for local FM. Here are my notes for the 6-Meter "Quik-Quad:"

- Bamboo Pole Spreaders
- Driven Element Spreader ±82"
- ±3% for Directors / Reflectors
- Held together with large plastic wire ties
- Quik-Quad supported by 1-1½" PVC
- Notched at top to support poles
- Attached with wire ties (small hole in PVC below notches)
- Thin wire elements held at feed-point by a rubber band
- Coax-fed

And here are two ideas for getting on 10-Meters very quickly and easily:

- . . . **10 Meter Sperrtopf Coaxial Sleeve Dipole**
¼ wave vertical radiator (wire or rigid)
Inner lead of the coax attached to the radiator
Coax braid attached to a "sleeve"
¼ wave metal tube or sleeve over the coax from the feedpoint (choking the rf)
- . . . **10-Meter Coaxial Cable Dipole**
¼ wave wire radiator
4" 6-turn coaxial choke ¼ wave from the feedpoint
The choke makes the remaining braid of the coax mimic a Sperrtopf sleeve